Clinical Lecture

ON

THE ADVISABILITY AND THE METHOD OF OPERATING IN CASES OF ACUTE INFLAMMATION OF THE APPENDIX IN THE PERIOD FROM THE THIRD TO THE SIXTH DAY.

Delivered at the London Hospital,

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GENTLEMEN,—I have taken up this question to-day for two reasons. The first is that in my opinion it is the most important question in the treatment of acute inflammation of the appendix that still remains unsettled. Everyone who has seen a large number of cases agrees now that the sooner an appendix which may be on the verge of giving way or of becoming gangrenous is removed the better it is for the patient. Everyone, too, agrees that, in the later stages of the disease, when the acute attack is subsiding and the condition of the patient improving in every respect it is advisable and safe to wait. But everyone does not agree as to what should be done in the intermediate stage of an acute attack, when the patient is seen by the surgeon for the first time between the third and the sixth day after the onset of the acute symptoms, at a time when the septic inflammation has already spread widely into the general peritoneal cavity, and there is no indication whether it is going to stop or to spread more and more widely. These are the cases that furnish the highest rate of mortality after operation, a rate so high that some have advocated not operating upon them at all, and this is one reason why I wish to deal with them to-day. My other reason is that we have had of late an unprecedented series of acute cases, even for the London Hospital, and that a large proportion of them have reached this stage before they applied for admission.

Of course, the stage of which I am speaking is not marked off by any definite symptoms from that which precedes or that which *follows it. In an attack which is fairly acute* it extends, roughly speaking, from the end of the second day to the sixth or seventh, but it is influenced by many things. In children, for instance, it begins much earlier than it does in *adults. It may begin in them within the first few hours.* Then it is influenced, perhaps more than you would think, by the anatomical position of the appendix, whether, for example, it lies behind and to the outer side of the cæcum and colon, or *hangs free in the peritoneal cavity; and, of course, it is* influenced by the intensity of the inflammation and the virulence of the organisms that are causing it. Exact definition, therefore, is out of the question, but, roughly speaking, the *third to the sixth day may be looked upon as its limits.* A very large proportion of the acute cases that come to the hospital are seen by the surgeon for the first time after they have already entered upon this stage, and I am sorry to say not a few of those which *occur in private.*

No matter what the actual number of hours may be, the clinical symptoms are usually so definite that there is no difficulty in recognising this stage when it is reached. The attitude and the aspect are characteristic. The patient lies upon the back with the knees drawn up. The eyes are ringed with black circles. The cheeks are sunken. The lips are dry and the tongue, unless there has been recent vomiting, is dry and already brown. The respiration is entirely costal. The whole abdomen is distended, hard, rigid, and motionless. The muscles are too tense and the walls too sensitive for you to be able to distinguish anything by pressure; but on light percussion the note is distinctly flatter in the right iliac region than it is elsewhere. The pulse is quick and rapid, usually over 100 to the minute. Exceptionally, in two or three instances, I have found it quite slow and fairly soft. The temperature is raised two or three degrees. Rectal examination, which should never be neglected, reveals a certain degree of fulness and tenderness, especially upon the right side. In many instances the rectal temperature is one or even two degrees higher than it is in the mouth, so high that the difference can be appreciated even without a thermometer.

Such, gentlemen, leaving out all detail, is in brief the description of the condition of the patient. It means, of course, as is patent to you all, septic peritonitis spreading from the right iliac fossa and becoming generalised. The appendix, the source of all the trouble, is either gangrenous, or has given way, allowing the liquid contents of the bowel, with perhaps a fæcal concretion, to escape into the surrounding tissue. The actual position which it occupies, and the route along which the inflammation is extending, are not known, but occasionally there is an indication of some value. An exceptionally tender spot, for instance, in the lumbar region, just over the crest of the ilium, means that the cellular tissue behind the colon is involved, and that the inflammation is tracking upwards along the posterior abdominal wall. If there is great tenderness on rectal examination, especially if it is high up, or more marked upon the right side than the left; or if there is pain on emptying the bladder with, at the same time, increased frequency of micturition, it is probable that the appendix is lying on, or over, the brim of the pelvis. If, as in many of these cases, the attack is very acute and sudden, and the whole abdomen becomes involved almost at the same time, probably the appendix is lying on the inner side of the cæcum and has ruptured into the general peritoneal cavity; and this is rendered more likely if the left side of the abdomen rapidly becomes as tender and painful as the right. But at the best all of these are only probabilities. If there is an operation they indicate to some extent where and how drainage is to be carried out. They help but little in determining whether an operation should be performed or not, and that is the point to which I wish to direct your attention to-day.

It is admitted by everyone, no matter what views he holds as to the desirability of early operation or otherwise, that operation at this stage is a very grave undertaking. The mortality is far higher than when the appendix is removed at the beginning of an attack or after the acute symptoms have subsided. But I ask you to consider with me for a moment [illegible] has supposing [illegible] far has been [illegible] the appendix. [illegible] round. Now it has reached the general peritoneal cavity. Part of this is already involved, What is the likelihood of the inflammation stopping now? What is there to make it stop? That *it does* sometimes stop there is no doubt. Every now and then you meet with a case, very rarely a first attack, in which owing to the fortunate presence of adhesions, or for some other reason which we *do not know and cannot be aware of beforehand,* the invasion is checked before it has spread too far, and the effusion becomes circumscribed. But, given the actual patient before you, you cannot calculate on pro*babilities of this kind, or treat him by percentages.* If *you* are going to leave him without operating, you must make sure beyond the possibility of doubt that the invasion has been [illegible]; the pain and tenderness abating; the temperature dropping; the tongue growing moist; and, perhaps more than all, the general aspect of the patient improving. You must not place any reliance on what you are told by the patient. In what is sometimes called, because of its deceptive character, the quiet interval, it is not uncommon for the patient and even for the patient's friends to imagine that there is some improvement, when all the time the apparent abatement of the symptoms is merely the result of the poisoning of the patient's nervous system blunting all his senses. You must be on your guard against this, and you must not pay any attention to what is told you in the face of the evidence of one single objective sign. Nothing short of a general all-round improvement justifies delay. It is not enough that the symptoms are remaining stationary or that most of them are showing signs of improvement. They must all be improving. If there is one single one about which you are in doubt, one single one that is not definitely better than it was a few hours before, the attack is not subsiding; the danger *is increasing* and you are not justified in waiting.

I have the less hesitation in speaking to you so positively on this point because I am convinced that the rate of mortality after operations performed during this stage is far higher than it need be The reason is simply that too much is attempted. The object in operating is not to get rid of the poison by a process of mechanical removal. That is impossible, if you think for a moment of what the peritoneum is, and nothing but harm can result from trying. The object is to place the injured tissues in such a position that they may be able of themselves to take all the steps that are required for their protection as rapidly and as easily as they can. This is all that can be done. Attempting to do more is only likely to inflict a greater injury. Picture to yourselves for a moment what is happening. A virulent poison, set free in one special corner of the peritoneal cavity, is overcoming all opposition and spreading wider and wider along the line of least resistance. It cannot of itself escape through the abdominal wall. There is no chance of its doing this for many days to come. It cannot escape by the bowel. Its easiest route is either through the planes of cellular tissue or in the interstices between the coils of bowel, and here it can spread, and does spread, with the greatest ease. Meanwhile the surrounding structures are making every effort to *check its further progress The walls of the abdomen and* the intestines remain absolutely quiet so as not to distribute the poisonous fluid more widely by their movements. The amount of blood flowing through the part is enormously increased. The peritoneum keeps on pouring out lymph to act as a barrier and check the advances of the micro-organisms. Vast changes, of which we do not yet know the full significance, are taking place in the blood and lymph. Unless the case is one of those fulminating ones in which the nervous system is overpowered from the first by the toxæmia, so that it can do no more, everything that is possible is being done by the blood and the tissues to check the spreading of the poison, to stop its absorption, and to rid of that which has already entered into the circulation. problem is how to help them in this. Saline fluid injected into the subcutaneous tissue or into the It dilutes the poison already absorbed and helps neys to excrete it, and there is reason to believe that sufficient quantity it may be able to reverse the pressure and check further absorption *from the surface* of the peritoneum. Nucleinic acid may be injected subcutaneously. Adrenalin may be given to raise the blood pressure. The bowels may be cleared out as soon as possible. If the nature of the infecting organism is known the corresponding serum may be injected. Even if it is not known I cannot help thinking that I have seen distinct improvement follow the somewhat haphazard administration of antistreptococcic serum. But none of these things will cure the patient so long as the poison is allowed to keep on spreading from its primary focus. Unless this is stopped, and stopped effectually, nothing else is of any avail.

The first thing to do is to lay this focus open from one end to the other so that there may be the freest possible exit through which the poison can escape. Until this is done nothing else is of any use. The spot from which the poison is spreading has to be laid bare in its whole length and breadth, so that it shall be easier for the septic fluid to escape outwards than to spread further inwards into the peritoneal cavity. The direction of the pressure has to be reversed. A free incision must be made through the abdominal wall. If there is one spot more tense or more tender than the rest the incision should run through that. Valuable information can sometimes be obtained about this, when the patient is being placed under anæsthesia, by watching for the spot from which the tenderness and rigidity are the last to disappear. If there is no localising sign of any kind the incision should run parallel to the crest of the ilium through a point one-third of the distance of the anterior superior spine from the umbilicus. But the essential feature is that the incision should be long and free through everything until the fluid pours out. There *must be no muscle splitting.* The possibility of hernia afterwards is a mere detail in cases such as these. All the structures of the abdominal wall must be divided evenly. Then the finger should be very gently passed inwards in three directions successively: on the outer side of the colon, back to the abdominal wall; in front of the colon, to its inner side; and down *into the pelvis. If there is much* fluid to escape drains should be inserted in each of these directions. I prefer a tube for the outer side of the col passed right through the abdomen over the crest of ilium, and gauze drains for the other two. But if the pat is a woman and the pelvis is involved, a tube passed thro the vagina into Douglas's pouch answers better.

That is all. The intestines should not be allowed to esc No search should be made for the appendix. If it pres in the wound, or you can get down to it at once, it should course, be removed. This is always a source of satisfact as it shows the source of all the mischief has been reach but nothing but harm results from a prolonged search for appendix at this stage. It can be dealt with later, when patient has quite recovered. No attempt should be mad cleanse or wash out the peritoneal cavity. Everythin exposure to the air, even contact with warm normal salt s tion—acts injuriously upon the peritoneal lining when i healthy, and is simply destruction to it when it is inflan There is no possibility of *getting rid of the poison* by system of washing. The attempt only distributes it ov wider area, carries the infection into regions which hitherto escaped, and does infinite harm. You have no r to feel the pulse. You have only to look at the patient's while it is being done to appreciate the effect that *so-called cleansing of the peritoneal cavity* has upon chance of recovery. And no attempt must be made to se early union of the wound in the abdominal wall. opening should be lightly packed with gauze and silkw gut sutures tied across it so as to prevent any of the b prolapsing if vomiting should set in. Later, when the ne sity for such free drainage is passed and the gauze is moved, the same sutures may be used to draw the margin the wound more closely together.

One great merit of operating in this way is that the w proceeding, if everything is got ready beforehand, need take more than a few minutes. Then the patient shoul placed in bed, lying upon his right side, with the shoul raised and the knees drawn up, and saline infusion, if it not already been started, begun at once. The length of the tubes should be left depends upon the amount of charge that comes away; but gauze drains are of no us drains after the first 24 hours. They should be remove the end of this time, and a mere wisp of gauze introd into the wound, to prevent its walls collapsing together blocking the exit. It is quite true that in cases treate this way secondary abscesses may form a few days l from foci of infection that have been left among the l of intestine; but these are merely local collections of and there is no fear then of general peritonitis setting and it is quite true that later the appendix may have t removed and another operation performed; but consequences of this kind do not merit consideration w septic peritonitis has already broken out and is rap becoming general.

THE ELECTRICAL REACTIONS BACTERIA APPLIED TO THE DETECTION OF TUBERCLE BACILLI IN URINE BY MEANS OF A CURRENT.[1]

BY CHARLES RUSS, M.B. LOND.

PART I.

Cohn and Mendelsohn, amongst other experiment submitted pathogenic bacteria to the action of the elec current to determine its germicidal value. Currents various strengths were passed through cultures and different periods; when failure to grow in subculture observed the lethal dose had been found, though it deemed difficult to decide whether the organisms were kil by the current as such or by exposure to noxious gas e.g., chlorine liberated from the electrified substances. object of my experiments is not lethal; the considerati which led to their performance were as follows. If pa genic bacteria are susceptible to electric currents travers fluids in which they are present, and such susceptibilit shown by movement to one electrode, then the elec

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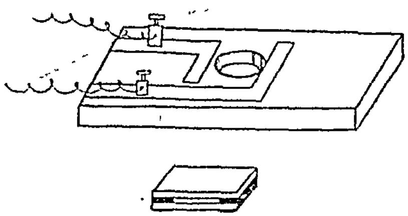
[1] A paper embodying the main features of this work was read be the Royal Society on June 24th, 1909.

urrent might be used for their direction to that electrode
for this purpose, the electrode
ms identified. Amongst fluids
to contain tubercle bacilli are
rine, pleural effusion, cerebro-spinal fluid, or milk. The method might also be applied to the detection of typhoid acilli in water.

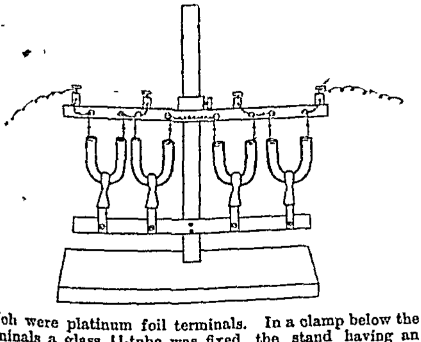
To this end I tested certain common pathogenic species in saline emulsion enclosed in a small glass cell (described ater), through which a current was passed, while observation f the organisms was made, using a microscope with 1-6th inch bjective. It was soon evident that the bacteria were moving owards one pole, a considerable aggregation of organisms t that pole becoming visible; upon reversing the current hey moved in the opposite direction. These first experiments rere carried out with the glass cell already referred to, which consisted of the following parts. Fig. 1: A cover-square was supplied with two platinum foil (or lead) terminals separated about six millimetres from each other; a lrop of weak bacterial *emulsion made electrical connexion* between the two terminals and was prevented from drying y another cover-square resting on the top of the first one, he edges of which were greased. The "glass cell" was then mounted on the stage of a microscope and a current of about one milliampère was sent through it. By observing the time required for a watched bacillus to traverse an apparent inch, and dividing by the magnification of the instrument used, some idea of their speed under these conditions was gained.

FIG. 1.



The question arose as to whether this motion might be an *effect due to some variation of the surface tension* of the fluid under the conditions of the experiment. I therefore decided to make further tests by another method in which this possibility was excluded. The apparatus used was a source of current—viz., Leclanché cells, a galvanometer, a reverser, a voltmeter, and a simple form of contact maker; having these in circuit the end wires were led to a stand (Fig. 2) furnished with contact screws, suspended from which were platinum foil terminals. In a clamp below the erminals a glass U-tube was fixed, the stand having an adjustable fastening permitting the foil terminals to be owered into the upper ends of the U-tube. An emulsion of the bacillus coli communis was made by pouring normal
saline upon a
growth by a
a test-tube w
agitation an even emulsion was then made of the bacilli.

FIG. 2.



Some of this emulsion was next poured in to nearly fill the U-tube, the platinum terminals were lowered into the limbs of the tube, so as to dip a quarter of an inch under the emulsion, and a small current was passed. By observations made at hourly intervals, organisms were seen accumulating under one of the terminals, until after several hours there was a dense column of bacteria under that terminal, visible to the naked eye as a white cloud, the fluid in the opposite limb and bend of the tube becoming apparently quite clear. Upon reversing the current similar accumulation under the opposite terminal was noticed, with similar clearance away from the terminal at which, in the *first* instance, the *accumulation* had *occurred*; the process was then repeated. It was also noticed that the aggregation became less complete with each reversal of the current. In several electrolytes of very high resistance a spurious effect was noticed. Soon after the current had been established a clearance of the bacteria from one electrode was noticed without a corresponding accumulation at the other. After stopping the current it was observed that the bacteria soon became uniformly distributed throughout the fluid in the U-tube.

The effect of a similar current was next observed with *bacterial emulsions in different salts (electrolytes)*, viz.:—NaCl, Na_2HPO_4, $NaNO_3$, Na_2SO_4. In this case equal amounts of the emulsion were poured into equal volumes of these chemicals, and by arranging four U-tubes in series their electrification was simultaneous. (I used 4 per cent. solutions of these electrolytes when in series, to enable sufficient current to pass; if the solutions were very weak—e.g., ½ per cent. or less—gravitation of the bacteria occurred before the electric effect was evident.) In such a series of observations I have found that in some electrolytes no visible effect occurs, *while in others the accumulation is evident; also that the* accumulation varies in degree with different species in the same electrolyte, and for the same species in different electrolytes. Some of these observations are set forth in Table I., and are comparative rather than absolute. If, for example, an organism is indicated by aggregation in NaCl and *nil* in Na_2SO_4, it means that by the time the effect was evident and complete in NaCl no change was apparent in Na_2SO_4. It will be noticed from Table I. that the basic

TABLE I.

—	Na_2	SO_4	Na	NO_3	Na_2	HPO_4	Na	Cl_2
Bacillus coli communis		+		+		+		+
Bacillus typhosus.		+		+		+		+
Staphylococcus aureus.		Feeble +		Feeble +	Not tested.			+
Tubercle bacillus.	Nil.	Nil.	Nil.	Nil.	Nil	Nil.		Feeble +
Hoffmann's bacillus.	Nil.	Nil.	Nil.	Nil.		+		+
Bacillus pyocyaneus.		+		+		+		+
Micrococcus melitensis.		+		+		+ +		+
Streptococcus.	Nil.	Nil.	Not tested.			+		+
Gaertner's bacillus.		+		+		+		+

The acid radicle column = anode. The base column = kathode. + indicates aggregation, and has no reference to electric sign nomenclature. $\genfrac{}{}{0pt}{}{+}{+}$ = marked aggregation.

TABLE II.

—	Zn	SO_4	K_2	SO_4	Mg	SO_4	$(NH_4)_2$	SO_4
Bacillus coli communis.	Nil.	Nil		+	Nil.	Nil	Nil.	Nil.
Bacillus typhosus.	Nil.	Nil		+	Nil	Nil	Nil.	Nil.
Staphylococcus aureus	Nil.	Nil		+	? +		Feeble +	
Tubercle bacillus.	Nil.	Nil	Nil.	Nil	? +		+	
Bacillus pyocyaneus.	Nil.	Nil		+	Nil.	Nil	Nil.	Nil.
Gaertner's bacillus.	Nil.	Nil.		+	Nil.	Nil		Feeble +
Micrococcus melitensis.	Feeble +			+	Nil.	Nil	+	

The streptococcus in Table I. died before Table II. was begun. The ? was necessitated by oxide formations referred to under choice of electrolytes.

element (sodium) is constant, while the acid radicle varies. The same species were similarly treated with electrolytes in which the acid radicle (SO_4) was constant and the base varied. The results are set out in Table II. In both tables the thin line indicates the point of cleavage of the dissolved salt under the influence of the current (primary electrolysis), the metallic radicle proceeding to the negative and the acid radicle to the positive pole respectively.

Upon the completion of the tests set forth in these tables my further work took another course, but I hope to confirm the results by repetition at an early opportunity. From the experiments indicated I concluded that these bacteria suspended in certain fluids and under the influence of a suitable electric current migrate to one of the electrodes, that they proceed on reversal of the current to the same electrode (in the opposite limb of the U-tube), and that the effecting force is sufficient to overcome gravitation; also that certain species migrate to the positive electrode in some fluids and to the negative in others. I also found the movement to occur in boiled cultures, which shows it to be independent of the bacterial vitality. In view of the object of these experiments, it may here be remarked that no consideration was paid with regard to the killing of the organisms used, either by saturation with germicides or by the currents.

Before proceeding further it will be convenient to discuss the nature of the movement just described. Amongst suggestions that present themselves to account for it are the following.

1. It is known that various forms of organic life exhibit electrical phenomena, and in the case of the electric eel the electric charges are generated in the skin. I recall, also, Dr. A. D. W. Waller's interesting demonstration of galvanic susceptibility of tadpoles. Going higher in the scale, the capillary electrometer reveals a minute change of electrical state of the human heart with each phase of systole and diastole. It must be admitted as possible that a living bacillus may also possess or generate as the result of its vital processes, minute electric charges, and if such exist it follows that these charges would be attracted to the electric pole of the opposite sign, migration of the charged object being a necessary sequence of the process.

Reference may be made here to the migration of suspended particles and of colloids under the influence of an electric current, a short account of which may be found in Le Blanc's "Text-book of Electro-Chemistry," p. 157. But against such an explanation is the fact that solutions have been found in which no movement occurs; yet through these solutions the same quantity of electricity was passing, and the facility for movement was presumably as good as in the other solutions. It is also unlikely, if bacteria possess or generate the charges postulated, that they remain in a charged condition when killed by boiling.

2. By the ionic theory in the case of a simple salt—e.g., NaCl dissolved in distilled water—the molecules are considered in the main to be united as Na and Cl atoms. During the passage of a current through such a fluid very large numbers of the molecules of the salt break up into separate atoms of Na and Cl, each with an electric charge. These electrically charged atoms or ions proceed in numerous streams in opposite directions to the negative and positive poles respectively, where they are known to be liberated as free elements, chlorine gas and sodium, which latter element at least re-dissolves in the fluid and leads to secondary electrolytic effects (which are not important for the moment). It is therefore possible that these swarms of ions are causing the bacterial aggregation under discussion, and that their possible action may be considered from two main standpoints —(*a*) mechanical and (*b*) chemical.

(*a*) Since there are innumerably more ions than bacteria, the latter are, in a sense, in the way of the ions which may push the obstructing bacteria in front of them. (Taking the length of an average bacillus at five micro-millimetres, an ion is presumed to be about 1-5000th of that size.) During the passage of the current there are two streams of ions passing in opposite directions, and if one were more efficient than the other, one would expect it to be the element whose atomic (weight) groups were heavier than the other, or whose velocity were greater (the heavy ions travel faster than lighter ones); for example, when $(NH_4)_2 SO_4$ is the electrolyte, the group SO_4 which is proceeding to the anode has an atomic weight value of 96, against a value of 36 for the groups $(NH_4)_2$ going the other way; the former group should carry the obstruction with it rather than the latter; but there are two cases shown in the table of an organism going to the electrode at which $(NH_4)_2$ arrives; further, there are several instances in which no effect was obtained in solutions whose two groups are by no means of equal weight value.

(*b*) Ions, however, if considered in their chemical attributes as free atoms, and if free during electrolysis to exert their chemical affinities, may be doing so in the effects under review; taking the case of the bacillus coli communis suspended in sodium chloride, the migration of the organism to the anode may be due to affinity of the bacillus for chlorine. If this be the case, since the chlorine atoms are impelled to the anode, it would account for the conveyance of the bacillus to that electrode. While considering this aspect of the causation the following considerations may be added:—

The speed of the bacteria should not exceed that of the ions. The speed of ions is known for certain electrical conditions, and by observations of the bacterial speed, by means of the glass cell already described, I found the velocities to be of the same order of magnitude as the calculated velocities, but further tests are desirable in this particular.

From these experiments and observations I realise that inferences as to the nature of the movement observed are useful as a working idea of the mode of action, but must be classed as speculative, and possibly further work will show that the effect is due to another cause than chemical affinity of the bacteria for these moving ions. Should it, however, be a true chemical effect it seems reasonable to expect that a series of chemicals might be found in which various, and what we know as different, bacteria should show differences of behaviour which would contribute towards the identity of members of certain bacterial groups whose differentiation at present depends largely upon their chemical actions.

PART II.

To detect the bacteria in a pathological fluid by means of a current it is necessary to cause their migration to one electrode while a current traverses the fluid, then to withdraw that electrode and identify the organisms. Two essentials are requisite, viz.: (1) the addition to the fluid of an electrolyte in which the organism is known to migrate; and (2) to arrange the electrode at which they will eventually arrive in the form of a bacterial trap.

The fluid which I selected for this application was urine containing tubercle bacilli, since the recognition of the bacilli could be made by stained films alone. The first step, therefore, was to find an electrolyte in which tubercle bacilli showed a well-marked aggregation at one electrode. This proved a laborious task, for I found it indifferent to the majority of substances in which it was electrolysed; the procedure was substantially the same as in the U-tube experiments in Part I. Tubercle bacilli from glycerine agar cultures were ground in a mortar and emulsified in water and a few drops of the emulsion shaken with aqueous solutions of numerous chemical substances and tested for migration effects in the U-tubes during electrolysis.

The conditions found desirable in the selection of an electrolyte were: (1) that it should conduct electricity well; (2) that it should be soluble in water; (3) that it should not be destructive of organic matter; (4) that it should form a colourless fluid in aqueous solution; and (3) that it should yield on electrolysis no insoluble metal or metallic oxide at the kathode, simulating or masking bacterial aggregation. The aggregation of the tubercle bacilli recorded in Table I. is a feeble one to the anode in sodium chloride, but it was considered too slight for practical use. There is noted in Table II. an aggregation at the kathode in ammonium sulphate, but that is soon followed by the appearance of a clear zone of fluid between the bacterial cloud and the platinum foil, this preventing the organisms from remaining adjacent to that electrode. This led me to believe that the bacilli if caused to approach would not remain at the electrode, and therefore could not be withdrawn for identification; accordingly, I proceeded to try other substances, of which the following is a list:—Inorganic: Potassium iodide, iodic acid, sodium sulphite, sodium carbonate, sodium bicarbonate, sodium nitrite, potassium chlorate, microcosmic salt, ammonium magnesium sulphate, ammonium magnesium phosphate, potassium cyanide, and copper sulphate. Organic: sodium tartarate, sodium acetate, sodium citrate, maltose, glucose, lactose, cane-sugar, ethyl alcohol, methyl alcohol, acetaldehyde, glycerin, formalin, formic acid, amido-acetic-acid, urea, uric acid, sodium urate, oxalic acid, urea nitrate, lactic acid, ethylamine, acetone, chloralhydrate, phenylene-di-amine, sulphanilic acid, picric acid, carbol fuchsin, chloroform, carbolic acid, acetic acid, and acetamide.

A fair accumulation at the anode was observed with iodide of potash, but discerned with difficulty on account of the liberated iodine; by the addition of this substance to tuberculous urine I recovered numerous tubercle bacilli at the anode, though they had to be liberated from a solid mass of iodine formed in the trap at the end of the process. Various other substances were added to iodide of potash to redissolve this iodine, but they all interfered with the essential bacterial movement. I therefore abandoned potassium iodide.

In the experiments recorded in Tables I. and II. the bacillus was observed to react in the presence of chlorine and nitrogen and hydrogen combinations; the selection of new substances was therefore guided by those considerations—e.g., chlorine is present in chloroform and chloral hydrate, ammonia in ammonium and uric acid compounds, and nitrogen and hydrogen combinations in the amides and amines and free acids. In many cases the substances used are poor conductors of electricity, so that only one U-tube could be electrolysed at a time with the battery power available, reaction, if any, being complete in 12 hours, another twelve being required for reversal. Eventually, with ethylamine a fair accumulation was noticed at the kathode. The electrical reaction of tubercle bacilli in normal urine alone was found to be slightly anodic.

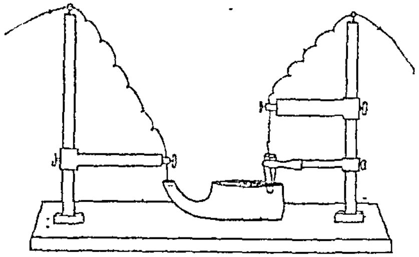
It was next necessary to find whether the addition of urine to ethylamine interfered with the observed kathodic aggregation of tubercle bacilli; the effect, however, remained unaltered. (In testing aggregations in urine I had noticed the formation of a white flocculent substance at the kathode, which is insoluble in the tube contents, but soluble in mineral and organic acids. As this substance is easily mistaken for a bacterial cloud at the kathode, the solubility in acid is a ready test for its presence; it may also be recognised by its rapid appearance and bulkiness of the cloud; in these particulars contrasting with the true bacterial massing at the electrode; lactic acid was therefore always added in urine electrolyses to prevent its formation.)

In a mixture of ethylamine, lactic acid, and urine the kathodic aggregation was found to be much stronger than in ethylamine alone, while separate tests showed no movement in lactic acid alone. Upon the completion of the aggregation stained films were prepared from the cloudy fluid at the kathode and from the apparently clear fluid at the anode; the kathode film swarmed with tubercle bacilli, and none were seen in the anode film. However, another difficulty was encountered. Although a very active electrolyte had been found in this mixture, the action had gone too far and spoilt the staining power of the tubercle bacilli (from a fresh culture); they retained the carbol fuchsin feebly and appeared very refractile. Since the recognition of tubercle bacilli from tuberculous urine was to be by stained films, their affinity for the stain must not be impaired, and means had to be found to overcome this difficulty. Two courses were open—viz., either to seek still further for an electrolyte in which the tubercle bacilli should give a good reaction, while the staining powers remained good, or to find an additional substance to be added to the urine, lactic acid, and ethylamine mixture which should "protect" the bacilli so that they should stain well at the end of the process. I chose the latter course.

In doing the tests with the 43 substances I had noticed during electrolysis of iodic acid a slight liberation of iodine at the kathode (in iodide of potash iodine is liberated at the anode), and I therefore thought that if iodic acid were added to the mixture either iodine or hydriodic acid would be liberated at the kathode simultaneously with the strongly alkaline products of ethylamine and lactic acid which form there, and that this iodine or hydriodic acid would neutralise or combine with these products which interfere with the staining power. I therefore made further U-tube tests of tubercle bacilli aggregating in ethylamine, lactic acid, and urine to which chloric acid, iodic acid, and bromic acid were also added, each in separate U-tubes; bromic acid appeared to give the best result, the bacilli taking the carbol fuchsin stain well at the end of many hours' electrolysis. The suitable electrolyte being therefore found to consist of urine, ethylamine, lactic acid, and bromic acid, further U-tube observations were then made as to the proportions of these substances which gave the most marked accumulation at the kathode. I concluded that E (1) L (4) B (2) U 1 or two parts was the most satisfactory arrangement.

Having therefore secured a tuberculous urine in which the bacilli had been found by the centrifuge, the U-tube stand was replaced by a glass vessel (Fig. 3) filled with the (B) (L) (U) (E) mixture. In the narrow limb of the vessel a platinum foil strip was submerged and served for transmission of the current through the main column of fluid. The gases liberated at this foil escaped by the narrow limb and were thus prevented from traversing the bulk of the fluid. In the other limb a glass tube drawn out to a coarse point was held also submerged slightly and traversed by a platinum wire which just touched the fluid surface. The lower end of the glass tube formed a bacterial "trap." By arranging the circuit so that the wire was the kathode, I expected that on passing a current the tubercle bacilli present in the urine and under the influence of the ethylamine and lactic acid would seek the kathode (as in the U-tube experiments), and would eventually enter the fluid enveloped by the submerged end of the tube and remain adjacent to the platinum wire. Having given them time to arrive, the wire was carefully lifted out, the glass tube was slightly lowered in the vessel, the tube top was closed by the wet or greased finger and lifted away to a slide previously smeared with fixative. The fluid in the "trap" was from two to three minims in volume and strongly alkaline at the end of the process, the bulk of the mixture remaining acid. This alkaline fluid was acidified with a 10 per cent. solution of acetic acid, placed on the slide, the film dried by heat and stained by the ordinary Z.-N. carbol fuchsin method. Tubercle bacilli were found in small numbers in the early attempts, and to confirm the experiment I attempted to detect the bacilli by this method in 12 consecutive cases, using always part of the remainder of a specimen of urine in which tubercle bacilli had been found by the centrifuge.

FIG. 3.



During these 12 experiments variations in the period of passing the current and in its strength were made. The results are shown in the Table III. and may be thus summarised: (1) that tubercle bacilli were in the "trap" upon each occasion at the termination of the process; (2) they were present in larger numbers than they would have been in from two to three minims of the original urine; (3) that they were present even when the urine had been greatly diluted; and (4) the evidence is not complete that all the bacilli in the urine used were conveyed into the "trap."

The appearance of the bacilli in the films made from the trap is similar to t[illegible] urine, although the pus cells (whi[illegible] ergo dissolution with the increasi[illegible] ontents. If the electrolysis be carried on for from 24 to 36 hours the bacilli fail to take the stain efficiently, but such exposure is unnecessary.

Comparative tests between the centrifuge and the electric current were then undertaken as follows. An emulsion of tubercle bacilli was prepared by Dr. Cavendish Fletcher by the method of vaccine making and standardised to contain 1000 tubercle bacilli per cubic centimetre; he added half a cubic centimetre of this fluid (i.e., 500 tubercle bacilli) to

TABLE III.—*Detection of Tubercle Bacillus in Tubcroulous Urines by the Centrifuge and Electric Current.*

Case.	Centrifuge.		Electric current.		
	Volume of urine used, in cubic centimetres.	Description of tubercle bacillus seen in films.	Volume used, in cubic centimetres.	Number of times diluted.	Number of tubercle bacilli seen in film but which is not a total count.
1	10	Moderate numbers.	10	15	59 bacilli.
2	30	" "	10	5	38 "
3	—	—	7	6	205 "
4	20	Fairly numerous.	6	7	84 "
5	—	—	6	7	149 "
6	—	—	6	7	103 "
7	—	—	2	21	15 "
8	10	Fairly numerous.	5	9	22 "
9	—	—	5	9	63 "
10	—	—	5	9	35 "
11	—	—	5	9	40 "
12	—	—	10	10	65 "

The volume used by centrifuge = 10 cubic centimetres once, twice, or thrice repeated i.e., the capacity of the tube = 10 cubic centimetres. The film forms a permanent record of the experiment in each case.

100 cubic centimetres of normal urine and thoroughly mixed the fluid and bacilli and attempted to recover the organisms by the centrifuge. I added a similar quantity of the same emulsion (500 tubercle bacilli) to 45 cubic centimetres of urine and made up the volume to 100 cubic centimetres with the lactic acid, ethylamine, and bromic acid mixture, horoughly mixed the ingredients, and passed a current for n appropriate period. The result and repeat experiments are set forth in Table IV. It was thought desirable to obtain an independent examination in the repeat experiments. A sample of the test fluid was therefore sent to Dr. X. at a London hospital to be examined for tubercle bacilli.

TABLE IV.

Centrifuge.				Electric current.	
Experiment No.	100 c.c. Normal urine containing—	Pathologist.	No. of T.B. found.	100 c.c. of normal urine + electrolyte containing—	No. of T.B. found.
1	500 T B.	Dr. Fletcher.	Nil.	500 T.B.	128
2	500 T.B.	Dr. Fletcher.	Nil.	No competition.*	
	500 T.B.	Dr X.	Nil.		
3	100 T.B.	Dr. Fletcher.	Nil.	100 T.B.	12
	100 T.B.	Dr. X.	Nil.		
4	500 T.B.	Dr. Fletcher.	Nil.	500 T.B.	64
	500 T.B.	Dr. X.	Nil.		

* My sample was spoilt while starting Experiment 2.

T.B. = tubercle bacilli. In Experiments 2, 3, and 4 the estimated number of tubercle bacilli was added to normal urine and divided into three equal parts, which were then diluted as indicated. A fresh emulsion of tubercle bacilli was enumerated for Experiments 3 and 4, since the bacilli disintegrate in time. (Tuberculous urine always contains pus cells, which are much more numerous than the tubercle bacilli and carry the latter with them during sedimentation or centrifugalisation. In these test fluids there was no pus)

During the course of the work described in Part I., null experiments were occasionally made by way of control as follows. The electric circuit was arranged as usual, and an emulsion of bacilli, known to aggregate when electrolysed, filled the U-tubes, but no current was turned on. In these null experiments no aggregation was observed and the organisms slowly gravitated into the bend of the U-tube.

In the experiments in Part II., the strength of ethylamine and bromic acid used was 5 per cent., and of lactic and acetic acids [illegible] per cent., all in aqueous solutions. The average voltage of the constant current used = 15 volts, and the average ampèrage = from two to three milliampères. The time of electrolysis in the urine experiments varied from eight to 18 hours; the arrangement (of trap) described and illustrated in Fig. 3 will work automatically for two days.

I acknowledge the valuable assistance of Mr. S. Russ, demonstrator of physics, Manchester University, with the electrical technique and measurements. I am also indebted to Dr. G. L. Eastes for the use of his laboratory during the earlier part of the work and to Mr. J. G. Pardoe for a supply of tuberculous urine from St. Peter's Hospital.

In conclusion, the results of the present preliminary investigation may be summarised as follows. Certain bacteria under the influence of a suitable current aggregate at one or other electrode. The aggregation varies with the nature of the electrolyte, and is probably due to an affinity between the products of electrolysis and the bacteria. It occurs with killed as well as with living bacteria. The aggregation by electrical currents affords a means of collection and examination, and was found of greater detective capacity in certain of the experiments undertaken than was the centrifuge. The differences in behaviour of various bacteria are such as to suggest the possibility of utilising the method for purposes of specific discrimination, but in this particular the data hitherto obtained are insufficient to warrant definite statements.

Since completing these experiments I have noted the following, amongst a by no means extensive amount of published work in electro-bacteriology. Abbot and Life (*Journal of American Physiology*, 1908, p. 202) tested microscopic quantities of motile bacteria suspended in distilled water, and observed to-and-fro movements in a glass trough. They used excessively minute currents, and concluded that variations in the observed reactions of the organisms depended upon their cultivation in acid or alkaline media. They found no effects with dead or non-motile (living) species; they avoided currents large enough to cause electrolysis, and concluded that their results were galvanotropic. Apostoli and Laquerriere (*Comptes Rendus de l'Académie des Sciences*, 1901, vol. cxxxiii., p. 186) concluded that constant currents are able to sterilise cultures or attenuate their virulence. They studied especially the conditions necessary to produce such effects. S. Kruger (*Zeitschrift fur Klinische Medicin*, 1893) contributes an account of the lethal effects of electricity applied to bacteria.

Other references to which I have not yet had access are the following:—H. Friedenthal: Ueber den Einfluss des Elektrischen Stromes auf Bakterien, Centr[illegible] 1896, vol. xix., pp. 319- [illegible] Unicellular Orga[illegible] logy, Granville, 1[illegible] Bogenlichtes au[illegible] mitt Findens, Lysinst, Kopenh[illegible]

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THE OPSONIC TEST.

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SINCE the first announcement by Sir Almroth Wright of his methods for the estimation of phagocytosis and vaccine treatment there has been much controversy both here and on the Continent as to the value of the opsonic test in diagnosis and treatment of bacterial diseases. Notwithstanding the severe criticism to which the test was subjected last year at the Berlin Pathological Society, it appears to me that the main contentions of Sir Almroth Wright have been left untouched, even if the scope of the opsonic test be for various reasons less wide than was at first believed. The object of the present paper is to consider the various criticisms levelled at the test, in the light of a three years' experience of it in relation to tuberculosis.

Metchnikoff's classical experiments have shown conclusively that phagocytosis is one of the means for removing and counteracting pathogenic bacteria in the body. In some cases it is quite evident that intracellular digestion of bacteria takes place, although there are clearly some kinds of bacteria against which phagocytosis is an insufficient protection. In some cases extracellular toxins are produced—e.g., in diphtheria and in tetanus—which alone are capable of reducing the defences of the body, and which would be but little affected by phagocytosis. In other cases

—e.g., the tubercle [illegible] protected that it cann [illegible] cyte. Wright's expe [illegible] regards the tubercle bacillus and staphylococcus little or no phagocytosis happens unless the bacteria are first acted on by the unorganised constituents of the blood or lymph. Whether (as Wright contends) this action is a preliminary digestive process, or (as Baumgarten believes) a process leading to the excretion or extrusion of a chemiotactic substance which attracts the phagocytes, obviously the unorganised substances in the fluids of the body do play their part in promoting phagocytosis, and that part is an action exerted upon the bacilli. Whence these unorganised substances (which Wright calls opsonins) are derived is still an unsettled question. Allen[1] states that the amount of opsonin present in the blood bears no definite relation to leucocytosis and that it is not affected by disease of the blood-forming organs, but he does not say on what evidence this assertion is based. On the other hand, he quotes observations showing that the opsonins are derived in at least some instances from the muscle plasma. The experiments of Yorke and Smith[2] show that the specific opsonins are probably derived from a non-specific pre-opsonin. It follows from this that partial exhaustion of the pre-opsonin by the attack of one organism will leave less pre-opsonin available to counteract another. Some of my own cases appear to show that non-specific causes may also reduce the opsonic power of the blood against tubercle. Baumgarten in the Berlin debate declared his opinion that phagocytes only attack dead bacilli—meaning presumably tubercle bacilli—and that their function is limited to removal of "the corpses of the slain in battle." He asserted that the opsonins only play a subsidiary part in the fight against disease and are not the most important antibodies. He based his assertion on experiments appearing to show that there was little or no difference in lethal power between cultures treated with phagocytes, or blood serum, or both, and similar untreated cultures, but surely the relative proportions of the two sets of combatants must affect the result. In a culture there are far more virulent bacilli in a limited space than are found in an average case of disease; and it may well be that where the bacilli are in a large majority a little phagocytosis makes no appreciable difference to the lethal power. In a test tube the results are static; in the body the effect is cumulative. Metchnikoff himself has shown that the victory may sometimes be with the bacteria instead of the phagocytes; but it does not even then follow that phagocytosis is of no value, for the phagocytes may be carried with their contents to parts of the body where bactericidal action is stronger, while they protect other structures from the ingested bacilli, and may help to gain a victory for the body even though they themselves are killed.

Antibacterial action in the body is not confined to opsonins or to phagocytosis; and there is reason to believe that the spleen and the thyroid (possibly other organs) are concerned in combating bacterial diseases. If, however, the fluctuations in the opsonic index correspond with those in agglutinating and bactericidal power (as appears to be the case) the test will still be a useful clinical guide. The presumption is that all these actions are set going by the same mechanism, since they can all be started by injection of a vaccine. Even if phagocytosis were a purely subsidiary means of defence, a mere scavenging of dead bacilli, it would still be a useful guide if it were known to vary with the activity of other antibacterial actions, as it is more convenient for estimation than the alterations in agglutinating or bacteriolytic action; and there is so far no other test which quite takes its place. It has been shown that where the opsonic index is low (as in the centre of an abscess) agglutinating and bactericidal action also are low; while at the periphery of th [illegible] n, the opsonic and other a [illegible] s also been shown by A. [illegible] body temperatures in tuberculosis and some other bacterial diseases vary inversely with the opsonic index. Now a high temperature is one of the greatest hindrances to recovery in phthisis, so that what raises the opsonic index and keeps it high is likely to help recovery. Many instances are recorded where a dose of vaccine has simultaneously raised the opsonic index and lowered the temperature, recovery following. Therefore, the presumption is that the fluctuations in opsonic index are a trustworthy guide to the degree of antibacterial activity, unless the test be vitiated by difficulties in technique. That this is not so is proved by the success attending Wright and his followers in diagnosis and treatment with the help of the opsonic test.

The tuberculo-opsonic test has been criticised on the ground that a large number of indices of tuberculous individuals plotted as a curve do not greatly differ from opsonic indices of presumably healthy persons similarly treated. This criticism seems to me to be based on the misconceptions that an index within normal limits is not common in tuberculosis, and that those who appear to be healthy are all free from tuberculosis. It would be quite easy to take a thousand observations of body temperature in undoubtedly phthisical individuals which should not greatly differ from a thousand other observations in the presumably healthy, and should present much the same curve when plotted; yet nobody doubts the value of thermometric observations in diagnosing tubercle. The same is true of opsonic indices, and in both cases the circumstances have to be taken into account.

Many tuberculous patients when put to rest in the open air will begin to have opsonic indices within normal limits who previously had supernormal ones; and others encouraged to take exercise will raise a subnormal index to within normal limits. Moreover, it is extremely probable that many of the apparently healthy are the carriers of quiescent or latent tuberculous foci, and these are likely to have a subnormal index. In estimating the tuberculo-opsonic index, wherever auto-inoculation is possible, all the circumstances must be taken into account, as there may be considerable fluctuations in the course of the day, even in cases which are almost free from fever; and if the index is subnormal at one hour and above normal at another, there will be yet another hour when the index is within normal limits. Many of the recorded instances of abnormal indices in the apparently healthy may be explained by the existence of latent tubercle which we know to be extremely common. Some are doubtless due to errors in technique, since there are many possible pitfalls, some of which have not so far been recorded in the medical papers.

In collecting blood for the test it is usually convenient to choose an early hour before auto-inoculation has been started by exertion of any kind. Coughing, the exertion of dressing, deep breathing, and other slight disturbances will in many cases cause auto-inoculation and alter the opsonic index. The controls should be taken at the same hour under similar conditions as to exercise. Sometimes, however, in doubtful cases two specimens are taken before and after exercise, or before and after massage or passive motion in local tuberculosis. If the difference is much greater than in the controls, this points to the existence of a focus of disease A single control is not sufficient as a standard of comparison, as there may be a difference of 50 per cent. in the counts from two healthy individuals, and a corresponding error in the specimen for diagnosis. Care should be taken not to heat the blood in sealing the tube, as this destroys the opsonic power. Specimens which are properly sealed will keep for several days without perceptible change. French states that in ten days the opsonic index is lowered by half its original value; but from Fleming's statements[3] it appears that the rate of deterioration is not equally distributed, but is slow at first and goes [illegible] ving off the blood the [illegible] since lymph from the [illegible] x than blood from the [illegible] n a finger wet with perspiration is apt to yield a red serum which may interfere with the test. Some kinds of blood are auto-agglutinating, and this is more often the case with a red serum than with one free from hydrolysed erythrocytes.[4] Blood which is centrifuged before clotting is complete interferes with the test, as clotting then takes place in the incubator and either blocks the pipette or causes an irregular distribution of phagocytes or of bacilli. The blood should therefore be drawn off at least an hour before applying the test, and in cold weather it should be placed in a reasonably warm place to hasten clotting.

As regards the blood corpuscles, incomplete removal of the plasma will of course vitiate the test. Moreover, as phagocytosis is a vital action it will not take place properly with corpuscles which have been deadened with cold or kept overlong in adverse conditions. In cold weather the blood should be kept in an incubator at blood heat for a quarter of an hour before the test is applied. Excepting for this the shorter the interval between collecting the blood and its being used the better. If the corpuscles are left very wet they should be evenly distributed by a circular twist of the tube. Indeed, this is in any case a wise precaution. Too rapid centrifuging is stated to cause clumping of the phagocytes and to lower the index.

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[1] R. W. Allen: The Opsonic Method of Treatment, London, 1907, p. 9.

[2] Biochemical Journal, vol. ii., Dec. 19th, 1906.

[3] Practitioner, May, 1908, p. 623.

[4] Fleming, ibid.

In preparing the bacterial suspension a relatively strong salt solution (1·6 per cent.) should be used, as Wright has shown that weak saline solution will excite some phagocytosis even without any serum to help it. Care should be taken to avoid the entrance of other bacteria, as otherwise there may be some destruction of phagocytes or of bacteria in the incubator. Also unsterilised bacteria of more than one kind may overwork the phagocytes, whose capacity is limited. Whenever a bacterial suspension may have to be kept for some time it is advisable to sterilise it. Tubercle bacilli are agglutinated by the serum of a tuberculous patient, which interferes with the accuracy of the test. This agglutination can be prevented by heating the bacilli to 100° C. A bacterial suspension which is too thick or too thin or unevenly mixed causes misleading results. The most convenient strength is such as will give an average of three or four bacilli per phagocyte, but any number between one and ten will suffice. Where the numbers are low an extra number of phagocytes should be inspected—say, 100 or more, instead of 50 per slide. If decided clumps of bacteria are seen in the slides they should be rejected. Such a slide is unreliable and gives too low an index. In performing this test the blood corpuscles, suspension, and serum should be taken in this order, as otherwise the corpuscles or suspension may be contaminated. The most serious error of this kind is where a particular serum contaminates the other tubes. Contamination of the bacillary suspension with blood corpuscles is less objectionable than the reverse. Care should be taken to draw the suspension from the upper part of the tube and to prepare more than is actually necessary, as the lowest layers will be perceptibly thicker than the upper. In mixing the three constituents some of the phagocytes may be left behind if they are drawn too rapidly up and down the pipette. Accuracy in measuring the quantities is, of course, necessary, but with reasonable care and skill the error need not be great in this respect.

With imperfect appliances it may happen that the incubator is not kept at the right temperature. One cannot expect to obtain satisfactory results with a variable temperature, or one which is too high or too low. Also, I think it advisable to keep the pipettes horizontal in the incubator, to prevent gravitation and unequal distribution. In making the slide preparation it is essential to spread the material in a very thin film, with a definite edge well within the margin of the glass, to avoid difficulties in counting. I have found it convenient to spread in a series of jerks, making a wavy or striated film; but Wright is in the habit of making the film with one continuous sweeping movement. For some time past I have been using for a spreader a piece of glass divided lengthwise, as recommended by Allen, as it gives two edges to the film each of which can be easily examined. If the film is too thick the phagocytes remain rounded instead of being flattened out, in which case bacilli may escape notice along the edges of the phagocyte and elsewhere. Too deep a staining of the phagocyte or insufficient staining of the bacilli may also lead to errors. On the other hand, if the phagocytes are too faintly coloured they may be altogether missed. Films are easily spoilt by insufficient decolouration with acid, but such a mistake would not be made by anyone who has had sufficient practice. Wright is of opinion that the Ziehl-Neelsen method of staining destroys some of the phagocytes, and has therefore abandoned it for the aniline or fuchsin method. I am, however, under the impression that the degree of heat used with the Ziehl-Neelsen solution has something to do with the result. If the hot stain is poured over the slides in a cool photographic dish, the specimens can be well stained without any damage. This method may not be quite so expeditious as Wright's own method, but several dishfuls of slides can be fixed and stained by it in less than an hour. In counting the bacilli, the same rules should be observed for all the specimens alike. Slides with clumps of bacilli or large masses of cells should be rejected. Fragments of bacilli should either be counted as distinct bacilli or as fractions of a bacillus. Uncountable clusters of bacilli should not exist in a properly prepared specimen; if a few are present, the numbers should be estimated as nearly as possible. It is customary in some laboratories to put down each such cluster as ten bacilli. All bacilli touching a phagocyte should be included in the count.

In examining a slide it should be remembered that phagocytes vary greatly in apparent size, according to the extent to which they have been flattened out. Mononuclears, even if covered with bacilli, are best disregarded. Owing to the arrangements at St. Mary's Hospital it has been possible to do much of the counting in duplicate or by three people in succession; and judged by this check, Wright is of opinion that with reasonable care there should not be a greater error than 10 per cent. Fleming (*loc. cit.*) gives a number of comparative figures which substantiate this statement. From time to time I have had the opportunity of comparing my own work with that of other laboratories, and have found the difference in results very small.

Clinical applications of the opsonic test must be left for another communication.

Farnham.

A CASE OF MULTIPLE ANEURYSMS OF THE AORTIC ARCH AND THORACIC AORTA.

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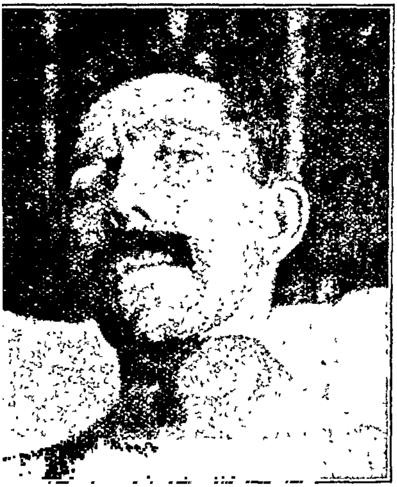
THE patient, a man, aged 45 years, a shopkeeper, was admitted into the London Hospital, under the care of Dr. Cecil Wall, on June 27th, 1908, complaining of a swelling in the upper part of the left side of the chest, together with radiating pain over the left shoulder, shooting down the left arm, causing numbness of the fingers, and hæmoptysis. The illness commenced two and a quarter years previously, when he seemed to have "cold upon cold," and finally, two years ago, suddenly brought up two to three pints of blood. He attended the hospital out-patient department, and was diagnosed at that time as "Old hæmoptysis. Consolidation of the right apex (? tubercle). Neuritis of the right cervical plexus." The patient described this pain as extremely acute, often causing him to keep his head bent towards the right side. He also had shooting pains along the right arm, similar to those he described on admission in June, 1908, as occurring along the left arm. The symptoms abated somewhat and he remained fairly well until October, 1907, when he commenced to experience the pain above described in the regions of the left shoulder and left arm.

On admission on June 27th, 1908, he complained of: 1. A pulsating swelling over the inner end of the left clavicle of about the size of a small hen's egg. This swelling was first noticed three months previously. It was very painful and tender and rapidly increasing in size. 2. Slight cough and shortness of breath. 3. A coldness and numbness of the extremities, especially the hands and feet, which he could not keep warm. 4. Hæmoptysis; small clots occasionally; no further large quantity was expectorated after the hæmoptysis at the commencement of the illness. 5. Inability to use his right eye. This was found to have been present since birth and was on account of a "congenital ptosis." The tumour had expansile pulsation, was dull on light percussion, and gave a sense of fluctuation. The skin over it was slightly reddened. The area of cardiac dulness was slightly increased, but resonance was present between this and the dulness over the tumour. The heart sounds were normal. Anæmia was marked and the superficial veins of the upper part of the thorax were slightly dilated. The pressure of the carotid pulse was 108. No pulsation was palpable at either wrist; the right temporal was palpable, but not the left. The carotid pulses were markedly unequal and asynchronous. No tracheal tugging was present, nor was there any laryngeal paralysis. The voice was somewhat hoarse, but the cough was not ısy." No glands were felt. The hands and feet were cold. There were crepitations present at both apices, ; at the right apex the breath sounds were bronchial in cter and at one spot whispering pectoriloquy was present. were proptosis and divergence of the right eye, but the ovements were free. The pupils were small but unequal :acted both to light and on accommodation. The fundi nedia were normal. There was no history or sign st syphilis. The patient was extremely temperate, ıad never done any really hard manual labour. The :rature was raised to 100° F. at night. The urine atural. Skiagrams taken on admission showed three ct bulgings of the thoracic aorta: (1) of the descend- ıorta; (2) at the junction of the transverse and ıding arch; and (3) of the ascending arch near the vhere the right innominate artery takes its origin.

sequent history.—The tumour on the left side gradually ırger until it reached the size shown in the accom- ng illustration taken a few days before death. No



[illegible] the [illegible] dilatations of [illegible]

ur was ever heard over it. It remained an expansile :ing tumour, the skin over it becoming more and more ntil, on Sept. 10th, it gave way and general oozing the sac commenced. This partially stopped for a few but a week later the large clot which had formed gave nd the patient immediately died.

ɔut four weeks previously another tumour gradually its appearance on the right side in the region of the sterno-clavicular articulation, evidently the old dilata- t the junction of the ascending and transverse arches becoming patent and approaching the surface. This ır also had expansile pulsation, but no murmur was . The radial and temporal pulses remained absent and hysical signs at the apices of the lungs practically the until death.

mary of necropsy.—Extreme anæmia. Rupture of large aneu- [illegible] portion of the thoracic aorta through [illegible] and second ribs on the left side [illegible] and separation of the first rib [illegible] of the clavicle, first rib. [illegible]

close to bifurcation. Post-mortem staining of aorta. Calcareous atheroma of coronary arteries; cerebral arteries free. Great œdema of both arms. Small patches of fibrocaseous tubercle behind and below the apex of the left lung and in the apex of the left lower lobe. Fibro-caseous nodule in the course of a bronchus behind and below the apex [illegible] mesenteric glands. Slight fibrosis of right testicle. Small polyp in splenic flexure. Mucous catarrh of stomach. No scars on legs or penis.

To the right of the sternum was a slight swelling between the second rib and the inner end of the clavicle. Immediately to the left of the sternum, over the first rib, there was a ragged ulcer of the skin; this was approximately circular, about two inches in diameter, and filled with red gelatinous clot. When this clot was removed the base of the ulcer was seen to be formed by a mass of firm yellow laminated clot in which lay the left border of the sternum, the first rib, and the clavicle. These bones were devoid of periosteum and eroded. Further, the first rib was separated from its junction to the costal cartilage, and the clavicle was separated from its sternal articulation and lifted half an inch upwards and forwards. When the skin and subcutaneous tissues had been reflected the swelling on the right side was found to be caused by a mass of soft, granular, yellowish clot, which had broken through the pectoral muscles and extended inwards on to the anterior surface of the sternum. This clot protruded through an aperture in the first intercostal space on the right side close to the sternum, and the sternum and first and second ribs in this region were devoid of periosteum and eroded.

The remov [illegible] the third to t [illegible] of the aorta, [illegible] filled the thoracic cavity almost completely and was firmly adherent to the chest wall. The dilatation was approximately of the shape of a heart, the apex of the "heart" lying at the commencement of the aorta. The greatest diameters of this sac were: vertically, 4 inches; antero-posteriorly, 3 inches; and from side to side, 5 inches. The upper border showed a mesial and two lateral convexities. The right lateral convexity was continuous with the mass of clot which had burst through the first intercostal space on the right side. From its posterior aspect arose the right subclavian and common carotid arteries, so that this portion of the aneurysm was formed, in part at any rate, by dilatation of the innominate artery. The mesial convexity was continuous with the clot which had ulcerated the skin to the left of the sternum. From the posterior aspect of this arose the left common carotid and subclavian arteries.

On opening the aorta the semilunar valves were found to be competent to the water test; the commissure and sinuses of Valsalva were not dilated. The intima of the lower inch of the ascending aorta was stained a deep red and showed large irregular yellow thickenings. There was no definite scarring. The dilatation of the aorta commenced abruptly one inch above the commissure. On the posterior wall of the dilated cavity was a Y-shaped ridge which divided the cavity into a superomesial and two lateral sacs, corresponding to the three convexities seen externally. The interior of the right sac, which corresponded to the [illegible] artery, was covered by a layer nearly one [illegible] ıite, laminated clot. This clot [illegible] through a large aperture in the [illegible] ıich lay beneath the skin to the ıight of the sternum. The superomesial sac was also lined by firm laminated clot which completely covered the apertures of the left subclavian and common carotid arteries. In the anterior and upper part of the sac there was a deficiency in its wall through which the clot passed to form the base of the ulcer on the skin to the left of the sternum. When the clot was removed from its lowermost part, in the fork of the Y-shaped ridge, an aperture of the size of a pin's head was seen which opened into the trachea 1½ inches above its bifurcation. The left lateral sac lay somewhat posteriorly to the other two; in its lower and posterior part was an aperture leading into the descending aorta. This aperture was only 1½ inches from the point where the ascending aorta commenced to dilate; it had rounded margins and corresponded in size to the lumen of the slightly dilated descending thoracic aorta. On removal of the clot the wall of the aneurysm was found to be thin. The intimal surface was smooth and showed numerous small pits.

The upper two inches of the descending thoracic aorta were slightly dilated and the intima showed slightly raised thickenings of a yellowish-white colour, cartilaginous in appearance. Between these thickenings the intima showed longitudinal wrinkles and some deep pits. On section the media was narrow and ill-defined, whilst the thickened intima was fibrotic. In the lower part of the descending thoracic aorta and in the abdominal aorta there were numerous large nodular thickenings, between which the intima showed some fine longitudinal wrinkles. These nodules were seen on section to be formed by a thickening of the intima, which was firm and cartilaginous in its upper part, but soft and yellow in its deeper layers. The media was well defined and only slightly, if at all, narrowed below the intimal thickenings. Close to the bifurcation of the aorta was a smooth calcareous plaque in the intima.

Of the four large arterial trunks arising from the aneurysm the right common carotid was the only one the opening of which was not completely occluded by the firm clot lining the sac; the opening of this artery was wide. The lumen of the right common carotid was somewhat dilated. The lumen of the left common carotid contained no clot, but was considerably contracted and in its lowest 1½ inches was barely patent. The subclavian arteries were of normal calibre.

Microscopic examination.—The aorta. Eight portions were removed for microscopic examination from the aorta on the distal side of the aneurysm. Two of these were sections of the nodules in the lower part of the descending thoracic aorta and in the abdominal aorta; they showed under the microscope the changes characteristic of atheroma. The intima was thickened and formed nodular elevations. At either side of the nodules two distinct layers could be distinguished in the thickened intima, an inner fibrotic layer, and an outer layer which contained stout elastic fibres and corresponded to the hypertrophic elastic and the longitudinal muscle elastic layers of Jores. In the nodular elevations the outer of these two layers was, with the exception of its innermost portion, entirely replaced by structureless débris, in which there was some calcium. The media was unaltered or a few of its innermost elastic fibres were destroyed. The adventitia showed no abnormality. The remaining portions were removed from the upper part of the thoracic aorta where the intima was wrinkled and pitted. They showed under the microscope the appearances of mesaortitis. The intima was thickened and consisted of stout connective-tissue fibres with very little elastic. It was seldom possible to distinguish individual layers in the thickened intima, and there was no degeneration of the connective-tissue fibres. The media was very narrow. In places it was replaced by fibrous tissue which united the intima to the adventitia; in others it contained patches of fibrous tissue, whilst its elastic fibres were swollen, tortuous, and darkly stained, and were arranged in small isolated groups. Vessels passed from the adventitia through the media to the fibrotic intima; these vessels were surrounded by a zone of round-cell infiltration, which in a few places was of considerable breadth. The adventitia was thick and fibrotic and some of the arteries showed an endarteritis fibrotica.

The liver.—Large fat droplets were seen in the cells of the periphery of most of the lobules in sections stained with Sudan. Close to some of the portal systems were small rounded granulation areas which consist of a loose network of swollen spindle cells, with numerous lymphocytes in the periphery. The centres of these areas were often necrosed and in one was a multinuclear giant cell with no definite border and with the nuclei near its centre. There were also areas in which the parenchyma was occupied by a network of fibrotic strands, most of which were connected with portal systems. These strands were formed in their central parts by connective-tissue fibres with spindle nuclei, and between the fibres were some proliferating bile-ductules and a few isolated liver cells; in the periphery of the strands were numerous lymphocytes. One or two of the strands were continuous with the rounded granulation areas. Within the meshes formed by these fibrous strands the parenchyma consisted of columns of large cells. No tubercle bacilli and no *spirochætæ* could be detected in specially stained preparations.

The kidney.—In the cortex was a small granulomatou nodule. Its centre consisted of a structureless substanc which was stained deeply by eosine and contained nuclea fragments; round this was a zone of closely packed con nective tissue cells with spindle nuclei, whilst in the extrem periphery were lymphocytes. Only one portion of th kidney was reserved for microscopic examination, and in thi no giant cells and no tubercle bacilli could be found in th granulomatous nodule.

Remarks.—The interesting features of this case are: 1 The absence of any of the usual determining circumstance of aortic aneurysm—viz., syphilis, alcohol, hard work, &c. or of any evidence of a long-sustained high blood pressure 2. The extraordinary tendency for clotting and attempts a spontaneous cure. Even when rupture took place and oozin commenced this stopped for a few days, a large clot forming until the final more extensive rupture proved immediatel fatal. 3. The old history of hæmoptysis, evidently one o the dilatations (probably that of the descending arch) ulcerating into the trachea two years previously. The ulceratio on the trachea was seen post mortem, and though old tubercl was present at the left apex, no extensive tuberculous proces had invaded the lung, making it practically certain that th large sudden hæmoptysis was of aneurysmal origin. 4. Th spontaneous cure of the aneurysm of the right side wit cessation of symptoms, followed two and a half years late by it again becoming patent after the appearance of th larger and more rapidly growing dilatation of the left side 5. The multiplicity of the dilatations.

Our best thanks for permission to publish this case are du to Dr. Cecil Wall, under whose care the patient was, and t Dr. Hubert M. Turnbull, Director of the Pathologica Institute.

A REPORT UPON THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER.[1]

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AND
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1. *The anæsthetic.*—The mixture is made of chloroform 2 parts by volume and ether 3 parts by volume. In hospital cases Duncan and Flockhart's methylated (red label) chloroform and Huskisson's "pure methylated" ether were used to make the mixture. A similar mixture was usually employed in private practice, though in certain cases one with ethyl-alcohol constituents was used for purposes of comparison.

2. *The method of use and apparatus employed.*—The mask employed (Fig. 1) is essentially a Skinner's mask and consists of a wire frame over which is stretched a single layer of thin flannel. The mask thus formed presents an oval opening, 5 inches by 3 inches and is capable of close adaptation to the face. The vault of the mask is high enough not to touch the nose when its rim rests upon the face. The size of the mask and the material with which it is covered are important details. It is found, for instance, that if two layers of the thin flannel are used instead of one an equal quantity of anæsthetic produces different effects in the two cases. The small tube passing through the middle of the stretched flannel is only of use when oxygen is required. A mask of the same dimensions, but with a guttered rim, a handle, and no oxygen tube, has generally been used by one of us (J. B.). In using the mixture a gradual process is followed. The mask is applied to the face and, after a few breaths, the mixture is added, a few drops at a time. A regulating drop bottle is used capable of delivering the mixture in isolated drops, in a rapid series of drops, or in a continuous stream. (Fig. 2.) During the first two minutes the mixture is poured upon the mask in such small quantities at a time that there is never more than a quarter

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[1] To be presented to the Anæsthetics Committee of the British Association for the Advancement of Science, August, 1909.

of the mask moist. From this time it is added more freely until, roughly speaking, in the case of men the whole surface of the mask, in the case of women three-quarters of the surface, and in the case of children one-half of the surface, is kept moist with the liquid. As a rule at least four minutes pass between the beginning of the administration and the moment when the maximum quantity to be used is upon the mask.

3. *The nature of the cases in which the method has been employed.*—The cases in which the method has been employed include a variety of operations comprising examples of almost all the graver abdominal procedures, which were particularly chosen as providing a severe test of the efficacy of any anæsthetic and method. Thus, pan-hysterectomies, removal of double pyosalpinx, difficult appendicectomies, excisions of rectum, and "complete" amputations of breast [illegible] 'ients comprised [illegible] states of health. [illegible] police sergeant to that of the emaciated anæmic young woman, the subject of long-standing colitis. Several so-called "bad subjects" have been anæsthetised with success—for example, heavily built, florid, thick-necked men, with irritable throats and nasal obstruction, patients with ill-developed lower jaws, &c., subjects who invariably give trouble under "gas and ether." In age patients have ranged from the infant of 14 months to old persons over 80 years of age. Several patients were markedly alcoholic, others were asthmatic and orthopnœic; one patient was suffering from pneumonia, and in this case oxygen was simultaneously administered through a tube passing through the mask. One case, that of a young woman who underwent laparotomy for the removal of double pyosalpinx, was a good example of the subject who, originally favourable, is at the time of operation in a condition of extreme feebleness from acute illness of some duration. Other examples of unfavourable conditions present in the patient were Graves's disease, acute bronchitis, and extreme anæmia. We have already conducted about 300 administrations and are continuing to employ the method. The preparation of patients has varied to some extent in private cases. In hospital patients it was as follows. On the afternoon of the day preceding the operation a dose of castor oil, usually about one ounce, was given. On the morning of the operation (which took place after 1 P.M.) an enema was given at 6 A.M. Tea and bread-and-butter were given at 7—two slices and one cup. A pint of beef-tea was given at 10. The enema was repeated if necessary.

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FIG. 1.

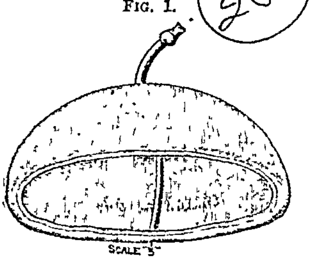
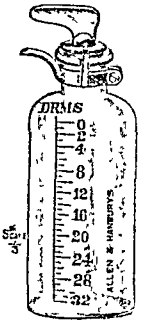


FIG. 2.



4. *The time required for inducing anæsthesia and the symptoms evoked during induction.*—Time of induction is reckoned from the moment of commencement of inhalation to the moment when the patient is ready for the operation. That this point had been reached was judged by the presence of (1) faint or absent corneal reflex; (2) complete muscular relaxation; and (3) presence of inspiratory stertor. The average induction period in a series of hospital cases was 8½ minutes; the longest time spent in securing readiness for operation was 17 minutes; the shortest time was 5 minutes. With children 5 minutes was the rule, and this was the time also in the case of a woman very anæmic and ill with peritonitis. The longest induction period was in the case of a middle-aged carman, red faced and accustomed to large amounts of beer, who had to be operated on for fistula in ano.

At the beginning of inhalation the vapour is not, as a rule, objected to, particularly if constituents made from ethylic alcohol be used. There is never any difficulty in getting patients to breathe freely. Excited talking, becoming incoherent, or quiet busy muttering occurred in 10 of 40 hospital cases. Some rigidity of limbs and of jaw muscles occurred in 18 of these cases. Excited movements of limbs or trunk so forcible as to require restraining lest the patient should fall off the couch occurred in 1 case. Excitement of the above kinds when it occurred at all was always after consciousness had gone—at any rate, to such an extent that the hearing was already quite lost. Secretion of mucus and saliva is not a feature of the induction stage with this anæsthetic. In difficult cases there is less temporary interference with respiration during the induction stage than when employing ether or "gas and ether."

5 *Amount of mixture required.*—Generally speaking, it is found that in the case of an adult male the mask has to be kept moist over its whole surface after the first four minutes until full anæsthesia is induced. After this it is necessary to keep it moist to that extent only in the case of "difficult" subjects. In the case of easier male subjects and in the case of women and of children only half of the mask is kept moist when anæsthesia is once established. In the case of children and women who are particularly feeble never more than half the mask is moistened from first to last and most of the time only a quarter. In a series of hospital cases the average amount of the mixture consumed was one ounce in 14 minutes; the least used was half an ounce in 22 minutes (feeble infant); and the most used was three and a quarter ounces in 30 minutes (fat alcoholic woman).

6. *The condition of the patient during operation and the occurrence of shock or other reflex effects.*—A condition which is highly satisfactory with regard to the state of the circulation, the respiration, the relaxation of muscles and the immobility of the patient can almost invariably be obtained and maintained. Respiration is usually rather deeper, the pulse quicker, and the colour better than in average chloroform cases. The pupil is usually of moderate size. In one case only was a change of anæsthetic demanded. In this case, during the removal of a gall-stone, a condition of persistent rigidity of the rectus led to a change from the mixture to ether (F.H.). In cases with marked respiratory defect the mixture may be given with oxygen. The type of anæsthesia obtained is more like that secured by low percentages of chloroform vapour than like that seen with ether. It is generally possible to secure a condition in which the corneal reflex is just present without the occurrence of inconvenient contraction of muscles or of coughing or retching. Reflex effects due to the operative procedure have been noted in several cases. Serious disturbance of pulse or of breathing arising in this way appears to be less liable to occur with this mixture than with pure chloroform, though more likely than when ether alone is given. Reflex effects during anæsthesia, chiefly bearing upon respiration, were evident in 15 of 75 carefully recorded cases. In most cases these effects were in the nature of stridor or of grunting expirations. They occurred during stretching of anal sphincter, forcible pulling up of uterus, internal urethrotomy, &c. The most marked instance of respiratory effect was produced by dragging upon the sac of a hernia and this case afforded an excellent example of the degree to which such an effect can go, respiration becoming absolutely obstructed and the chest having to be compressed three times before breathing started again. At the same time the pulse scarcely showed any change. Reflex movements of limbs or reflex rigidities of muscle were very rarely met with and this absence was particularly noticeable in rectal operations which, under ether, are frequently attended by such reflexes. Slowing of pulse as a reflex effect was occasionally observed. In a few cases well-marked pallor occurred during surgical manipulations. Severe surgical shock, resulting in disappearance of pulse, dilatation of pupils, opening of eyes, pallor, and stopping of respiration, was seen in one case, in which laparotomy was being performed upon a thin anæmic young woman, the subject of extreme chronic constipation. The

corneal reflex was faintly present at the moment when symptoms of shock suddenly showed themselves.

7. *After-effects.*—Speaking generally, recovery takes place rapidly and without any disagreeable after-effects, provided, of course, that the patient has been properly prepared. In no cases of our series were there severe after-effects. The worst instance was that of a case of removal of glands from a young man, aged 25 years. In this instance there was vomiting seven times during the first 14 hours after recovery of consciousness. Liquid nourishment was taken between the attacks of sickness and there was no serious constitutional disturbance. In several cases there was vomiting once or more after recovery of consciousness. In one of these the vomit consisted of altered blood on the two occasions on which it occurred; this was a case of gastro-enterostomy. In practically all cases there was, 24 hours after operation, complete freedom from sickness and from feeling of nausea. Our belief is that after-effects are less common with this method than with most others now in use.

8. *Conclusions.*—Our experience leads us to believe that this mixture used in the particular manner described is a trustworthy and comparatively safe anæsthetic. By this we mean that if the simple principles are adhered to of starting gradually and limiting the moistened area of the mask over-dosage is very unlikely to occur. It seems to us highly probable that the percentage of chloroform vapour thus offered to the patient is within the safe physiological limits. Moreover, the danger of post-anæsthetic lung complications, which detracts from the otherwise safe nature of a similar ether anæsthesia, is apparently no greater than is the case with chloroform. In our judgment the fact that even the most vigorous subject may be anæsthetised by this mixture on an open mask marks a distinct step in the progress of practical anæsthetics. The Rendle inhaler, and all similar semi-open inhalers for the A.C.E. or the C E mixture, should, in our opinion, now be discarded. The method described seems to us to contain the advantages of open etherisation with those of percentage chloroformisation, although, of course, it does not pretend to absolute scientific accuracy so far as vapour percentages are concerned. By this method chloroform is rendered safer than when administered *per se* on a Skinner's frame and very much safer than when administered on lint or towel. We go so far, indeed, as to express the view that the administration of undiluted chloroform by means of lint, handkerchief, or towel should henceforth be proscribed in practice. The anæsthesia produced by this method is doubtless a chloroform anæsthesia in its essential features, but the dilution with ether renders it possible to present continuously a weak and comparatively safe chloroform percentage to the patient. Moreover, this mixture may, with the rarest possible exceptions, be used whenever chloroform itself is indicated. But it has advantages of another kind. It answers admirably and certainly far better than ether in so-called difficult cases, particularly in those liable to display symptoms of obstructed breathing during induction and in those in which the secretion of mucus would constitute a difficulty. As a substitute for the "gas"-ether-chloroform sequence this mixture and method have much to be said in their favour. We have come to the conclusion, indeed, that some of the slight difficulties experienced by the anæsthetist in securing the most favourable surgical conditions during abdominal operations are often dependent upon the presence of small quantities of mucus within the upper respiratory passages resulting from the use of ether during the induction stage. Though rapid induction may be depended upon by "gas and ether" or similar methods before proceeding to chloroform or C.E. mixture, a penalty often has to be paid, so to speak, for this rapid induction—viz., some disturbance in the smoothness of the subsequent anæsthesia. Although the method here advocated has the disadvantage of a comparatively lengthy induction the eventual type of anæsthesia is highly satisfactory. In a word, we have no hesitation in recommending this mixture, administered by means of the particular mask and method we have described, as one which is capable of a wider range of applicability in general surgery than any other anæsthetic or mixture with which we are acquainted. Whilst the anæsthesia we have attempted to describe is undoubtedly safer than that produced by sprinkling undiluted chloroform upon lint, towel, or any form of open inhaler, we do not contend that it is safer, *whilst the patient is upon the operating table*, than ether anæsthesia. If, however, we take into account risks of ether anæsthesia *after the operation* we are of opin that the method compares favourably with all kn methods of etherisation, so far as safety is concerned.

HIGH-FREQUENCY CURRENTS AND THE MEDICAL APPLICATION.[1]

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IN January, 1898, D'Arsonval first described his meth of applying electric currents of "high-frequency" or "h potential"—i.e., tension or pressure—to the human fra so their medical history is but a matter of nine or ten ye True, the oscillatory nature of the discharge of a Ley jar or a condenser under particular conditions (origin pointed out by Joseph Henry of Washington) was mat matically expressed by Lord Kelvin as far back as 1853, for practical purposes the application of high-freque currents in the treatment of disease is quite a recent aff The D'Arsonval treatment, like any other new meth passed first through that stage in which it is vaunted a panacea for almost every disease, to be followed by period of universal depreciation where it is reckoned of value at all. The first corresponds to the time that a tr ment is carried out almost solely by its originator and a able assistants or pupils; the next to its exploitation b host of more or less unskilled persons.

High-frequency treatment now enters on the third st where discrimination is possible between the cases wher is beneficial and those where it is decidedly injurious or e dangerous. The physiological action and effects of currents have been studied at length both on animals man; contradictory results obtained by different obser have been or are being brought into line, and we are no possession of a working hypothesis which gives us (1) indications for use or avoidance in different varieties disease, and (2) the particular form in which, where it i value, it is to be applied to obtain beneficial results.

In a paper on high-frequency currents it is as w perhaps, to recall to your memories their true nat Briefly speaking, they are "succeeding groups of elec oscillations produced by the discharge at intervals o charged condenser." [Dr. Bailey then shortly described usual method of producing these oscillations, and tinued:—]

The currents of high frequency, produced in a mod apparatus, possess a potential (tension or pressure) of perh 10,000 volts; they are alternating (alternately positive negative), changing their sign in the short period of millionth or thereabouts of a second. According to amount of current passing they give readings on a hot-w milliampèremeter up to a thousand milliampères. Th travel with the same velocity as light, x rays, and transverse vibrations of the ether—i.e., 300,000 kilome per second—and they possess a wave length of from metres to 30 centimetres. It is manifest that if the organ be permeated by currents of such tremendous pressure an rapidly alternating it must be in a state of microsc vibration in which there is no time for a muscle or ne (or macroscopic part of muscle or nerve) to be sufficie stimulated by a positive or negative charge of electricit produce the effects the ordinary galvanic, faradic, sinusoidal currents cause. There is no time for a respo either sensory or motor, before the whole conditions positive or negative sign, &c., are reversed. Neverthel every cell or fibre of the organism is undergoing microscopic battering or massage under the influence the current, and to this microscopic battering, no dou the physiological effects are mainly due. Motor sensory nerves respond only to electric stimuli wh period is not less than one-ten-thousandth of a second, period of high-frequency currents being but one-hundre to one-ten-thousandth of this; therefore we find that on one hand they produce neither any immediate pain or ot sensory effect, nor on the other do they cause any muscular contraction of voluntary muscles.

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[1] A paper read before the Brighton and Sussex Medico-Chirurg Society.

The exposure of the neuro-muscular system, however, to these enormous differences of electric pressure of an oscillatory character does gradually induce the condition termed "inhibition"—i.e., the onset of a state in which stimuli, normally capable of exciting response, have no effect whatever. If the electrode of a high-frequency apparatus (attached to the end of the resonator which gives currents of high pressure rather than quantity) is placed in an arm-bath filled with warm water, the arm of an experimentee being placed in this and a current of 100 milliampères passed into the water for three or four minutes, the arm becomes blanched dead white up to the upper limit to which the warm water extended, the skin insensitive to a needle and numbed, and there is great loss of muscular power, and it takes an appreciable time and vigorous rubbing to dispel these results of the experiment. The electric tension of the water in the bath is great enough while the current is passing to give a half-inch spark if the finger is brought near it.

For practical purposes of value the applications of high-frequency currents may be divided into two varieties: (1) the method where large currents (in "auto-condensation," up to 1000 milliampères, an average being 350 milliampères) pass through the body; and (2) the method where the electricity is applied under very *high pressure* but the quantity is comparatively small; such are the effleuve and the electric spark—these latter are the more especial "high-tension" applications. The first type, the *quantity* type, produces effects which in many respects differ from the second or *tension* type; this is most evident in reference to vascular tension, for while "auto-condensation" causes general vascular dilation, flushing, sweating, and general hypotension, the "effleuve" causes spasmodic contraction of the skin vessels, goose skin (the intrinsic involuntary muscular fibres of the skin undergoing contraction), and a general rise of blood pressure of a variable degree, but most marked when the brush discharge is applied to the cervical and upper dorsal spine. The extreme effects of a high-tension current applied locally by an *arm-bath is an example*, the condition resulting being comparable to the "local anæmia" type of Raynaud's disease.

Dr. Doumer of Lille, in a paper read before the Electro-Therapeutic Section of the Royal Society of Medicine, pointed out that the study of electricity in the form of high-frequency or high-tension currents will be likely to lead to more valuable results than the investigation of other forms of electricity which produce, and the effects of which are masked by, secondary phenomena and their effects. "Continuous (or galvanic) currents," he says, "cause electrolysis and migration of ions—interrupted (or faradic) currents, muscular contractions—these may mask physiological effects produced exclusively by electric energy. High-frequency currents produce no chemical effect, no sensation, no muscular contractions, nevertheless they do cause manifest definite general biological effects. The organism is plunged into an oscillating magnetic field, giving rise to currents equally oscillating in the deeply seated tissues, which do not, however, produce any permanent displacement of the ionic masses." *He concludes, first*, that electric energy by itself, from the results of experiments on germinating seeds, does cause an increase of cellular vitality with an increase in the nutritive exchanges—i.e., it has a real action on the living cell, increasing vital exchanges, heat production, respiratory exchanges, excretion of effete products, this quite independently of action on a vascular system; secondly, that electric energy does act in reducing local congestion by its decongestive action; this has been shown experimentally: if the inter-digital membrane of a frog's foot be inflamed by the application of a drop of sulphuric acid the effleuve will cause the stenosed vessels to release themselves, the dilated vessels to contract, the circulation becoming normal when the vessels have resumed their normal calibre; thirdly, electric energy does produce a general action on the whole vascular system, which action varies according as the quantity or the tension of the electricity is a predominating factor, great quantity leading to hypotension, great potential or pressure to hypertension of the whole vascular system; and fourthly, it causes the phenomena of "inhibition"—anæsthesia of sensory nerves and inexcitability of voluntary muscles.

These four physiological actions being now recognised—viz., increased cellular activity, local decongestive action, alteration of general vascular tension, and inhibition—we shall be led to treat diseases or conditions where these physiological results are beneficial and to avoid those where they are hurtful. We can study our cases and formulate an opinion as to whether the good effect produced by one action may be counterbalanced or overshadowed by the prejudicial effect of another action, or we can so modify our remedy that one effect is produced while another is almost suppressed, and so on.

Auto-condensation.—Treatment by this method is carried out by placing the patient either recumbent on a couch or, better, sitting on a bent-wood easy chair on which is a long mattress cushion stuffed with rubber waste, the patient being thus insulated by the rubber cushion and an insulated foot-stool. A sheet of iron covers the chair-back. When the patient and the sheet-iron are severally attached to the two proper terminals and the "quantity" current applied, the patient and sheet-iron become parts of a "condenser" (the rubber cushion being the di-electric), hence the term "auto-condensation." A certain class of individuals who are subject to more or less continued vascular hypertension are benefited, temporarily at first, but after a while permanently, by this treatment. Many of these cases perspire, even in very hot weather, only on quite extreme exertion; their heat-regulating centres do not work, they feel surface-cold in winter and are prostrated by heat in summer. By auto-condensation the vascular tension is reduced, as measured by the Riva-Rocci instrument, some millimetres. Headache, a common symptom, is much relieved or abolished.

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CASE 3.—The patient was a woman, aged 60 years. Symptoms: giddiness, sleepiness, great depression, occasional "wandering," memory failing, onset gradual. Arterial tension found to be 160 millimetres. Condition returned to normal with 12 treatments, combined with dietetic and medicinal measures.

In two patients who felt extremes of heat and cold very severely, and whose circulation was evidently very defective, a method was used which gave excellent results. This was to give auto-condensation for ten minutes in order to dilate the vessels and immediately follow it by ten minutes' high-tension effleuvation to the cervical and upper dorsal spines to cause vascular contraction on the principle of exercising the vessels and stimulating the heat-regulatory centres.

High tension.—For general application of this type of current the patient is best seated in the chair and insulated by the rubber cushion and foot-stool. He holds a metal electrode as in the case of auto-condensation, but this is attached to the top of the resonator, and the other end of the resonator is connected to earth by an earth-wire. Neurasthenics, who commonly suffer from arterial hypotension, are best treated by this method; they should never have auto-condensations, or only exceptionally. Of six cases of neurasthenia, a cure resulted in two and two were improved.

CASE 4.—The patient was a woman, aged about 35 years, holding a very
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engagement [illegible]
100 millime [illegible]
under 12 treatments, current of 150 milliampères, and eventually was able to resume her duties as before.

Effleuration.—Here the high-tension "brush" discharge is applied locally by means of a special electrode. This is a rosette of metallic points attached by a rubber-covered wire to one end of the resonator, the resonator being a coil of thick copper wire in which the tension of the current is extremely high, so high that an abundant shower of two-inch sparks is given off from the rosette. Beyond the sparks the discharge (or effleuve) extends for four or five inches as a flame-like band which in the dark is seen to be violet in colour and is made up of large quantities of violet and ultra-violet rays. It causes a sensation like a rain of warm sand, a tingling in the limb treated, and minute fibrillary contractions of the muscles. Its chief value is in painful neuritic affections, and the larger number of patients one has to treat are sufferers from neuritis. We have here a condition of subacute or chronic inflammation of a tissue, the nerve, usually fairly deeply situated. By effleuvation we are able to modify this condition and to produce vascular changes in the nerve leading to the excretion of effete materials which may be irritating it; at the same time we reduce its hyperæsthetic condition. Most cases of rheumatic or gouty neuritis, the latter especially, are cured with more or less rapidity according to their chronicity.

During the last few years I have had sent to me many neuritic cases, principally brachial neuritis; all had previously been for longer or shorter periods on drug treatment without benefit, and a fair percentage of these were rapidly cured by effleuvation. Of eight cases of brachial neuritis treated during the past year four discontinued treatment (one after one application, three after two applications) for various reasons, and so did not give the remedy fair trial, but the remaining four were absolutely cured in from six to ten treatments. Practically in all these four cases the history of the effects of the "brush" discharge treatment was the same; after the first application there was definite slight relief—this was more marked after the second; after the fourth or fifth the pain was negligible, and the patient considered himself or herself well after the sixth or seventh.

CASE 5.—The patient, a man, aged 60 years, had pain in the neighbourhood of an old united dorsal angular curvature spreading along the intercostal nerves on either side; it appeared in all probability due to some fibroid-tissue contraction about those nerves. Treatment, effleuve to area of pain, 19 applications of 20 minutes, removed pain altogether.

After the *first* application of the effleuve, the immediate effect is often abolition of pain; this is due to "inhibition." After a variable number of hours this "inhibition" effect passes off, and, as a result of vascular and other changes set up in the nerve, the pain returns often rather acutely, and is worse for five or six hours. It is well to warn the patient of this in order that he may not be discouraged. By the next day, however, the pain in the limb or part is, as a rule, decidedly better than it was before the first treatment. This initial increase of pain does not occur after the second or later treatments.

There is a point of interest about the effleuve application, as I have said, in that it consists of a very large amount of violet and ultra-violet rays. These latter are believed to have a marked good effect in treatment of skin eruptions which have a microbic origin, and it is quite a usual thing to see an area, treated for neuritis by the effleuve, rapidly clear itself of an eruption, like acne, while the untreated part remains unaffected.

Sciatic pain, if it is neuritic and not referred pain, is often quite rapidly cured in two or three treatments, especially if its onset is recent. Cases of myalgia, so-called, such as the common stiff-neck, are usually abolished, as far as pain is concerned, almost at once. A woman, with sudden stiff-neck, only able slowly to turn her head with much pain, in 15 minutes could move it in all directions easily, and there was only a little stiffness but no pain on the following day.

In skin affections, where there is inflammation of a chronic type, we can alter this by effleuvation, we can diminish local blood-supply to inflammatory patches in eczema, erythema, &c., while stimulating the cells to increased activity, at the same time diminishing the hyperæsthesia and the itching. In pruritus the effleuve I have found of great value. A case in point: A patient with intolerable itching of the legs which had kept him awake most of each night for some weeks. There was a patch of dry eczema of long duration on the right arm, but the legs themselves were free from eruption. He had tried every conceivable remedy without much effect. I was sceptical of producing any good result, but gave ten minutes application of effleuve over each of the legs, which were then itching violently. The irritation was abolished there and then, and it had not returned some days afterwards.

The application of the high-tension current by metal electrodes to the anus in anal fissure, hæmorrhoids, and pruritus ani has been found of marked benefit both to alleviate and to cure. Old-standing varicose ulcers treated by the effleuve lose their thickened edges and develop a granulating surface, healing rapidly. Prostatic hypertrophy is said to be diminished; I have no experience of this, but one can understand that it is likely to be so if one bears in mind the so-called local decongestive action. I need not continue because, although high frequency has been tried, and apparently with benefit, in many other affections, it has been used very empirically and without any definite relation to a physiological result to be sought for.

I conclude by reiterating this. Experiments on animals and plants, observations on human beings, *not* founded on the individual experimentees' own statements, show that there are *four* marked effects of electric energy produced, uncomplicated by chemical effects, by high-frequency currents: (1) Increased cell activity, increased metabolism; (2) return of a locally inflamed tissue to its normal; (3) either general vascular dilatation or contraction, according to the particular method used; and (4) "inhibition," diminished sensory or motor excitability. So that where one or more of these effects is or are desired and where the remaining effects are not prejudicial, or can be very much diminished or abolished, there high-frequency treatment may be of real value, and for these reasons has a prospect of considerable therapeutic use in the future.

Brighton.

A CASE OF MULTIPLE INTRACRANIAL TUMOURS WITH INVOLVEMENT OF BOTH AUDITORY NERVES.

BY GEORGE NIXON BIGGS, M.B., B.S. DURH.,
AURAL SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN, SOUTHWARK BRIDGE ROAD, S.E.; ASSISTANT SURGEON IN THE EAR, NOSE, AND THROAT DEPARTMENT OF THE SEAMEN'S HOSPITAL ("DREADNOUGHT"), GREENWICH.

THE patient presented himself at the out-patient department of the Seamen's Hospital, Greenwich, on Nov. 11th, 1908, complaining of deafness of ten months' duration in both ears, the condition being most marked on the right side. There was no tinnitus, but there had been persistent right-sided headache for ten months, and for the last five months the patient had had attacks of vertigo. There was no sickness and no paracusis Willisii was present. On examination of the ears both membranes were found to be slightly indrawn and the cone of light was just broken at the periphery. With Siegle's speculum the movements of the membranes and mallei were found to be normal. The Eustachian tubes on catheterisation were found to be normal. Nothing unusual was found in the nose or nasopharynx. Nystagmus was present, the movements being equal in both directions. Both pupils reacted to light and accommodation, and double optic neuritis was present. There was no facial paralysis and no incoördination was noticed on rapid rotation of the hands. On walking the patient swayed laterally and the feet were kept far apart; there were no stamping and dragging. On standing erect with feet together and eyes closed he swayed from side to side. He had met with an injury though the falling of a bucket on the right parietal region five months previously, and a scar was present on the parietal eminence. There was no history or any sign of syphilis. On testing the hearing the following results were obtained:—

RIGHT.	TESTS.	LEFT.
—	Weber.	Deflected to left.
On mastoid.	Acoumeter.	Contact.
0	Voice.	Four feet.
0	Whisper.	0
Negative.	Rinné C.	Negative.
Negative.	Rinné C^2.	Positive.
– 30 seconds.	C. mastoid.	– 25 seconds.
Positive.	Gellé.	Positive.
	AIR CONDUCTION.	
Not heard.	*3C 16*	Not heard.
	2C 32	"
	1C 64	"
	C 128	Perception.
	C^1 256	Very much diminished
	C^2 512	" "
	C^3 1024	" "
	C^4 2048	" "

As the patient was obviously suffering from an intracranial tumour and there was almost complete nerve deafness on the right side, whereas on the left side it was not nearly so advanced, I sent the case into the hospital as either a tumour of the right auditory nerve or of the anterior part of the cerebellum pressing forward on the auditory nerve. The patient was admitted under the care of Dr. S. Russell Wells.

His state on admission may be summarised as follows. The hand-grasps were found to be equal and good. A slight lateral tremor of the hands on extension was present. Coördination movements were good. The knee-jerks were exaggerated. The elbow reflexes were fairly good. The plantar reflex was rather slow, but on the whole there was flexion. No ankle clonus; no nodes on tibiæ. No apparent diminution of sensation; no tenderness of the calves of the legs. There was no incontinence. No sign of disease was found in the chest or in the abdomen. Mr. R. E. Bickerton, who kindly examined the patient's eyes, reported as follows: "Nystagmus is present, there is no paralysis of any of the extra-ocular muscles, [illegible] 9. L., 6/9. Both fields of vision [illegible] is slightly larger than the left, [illegible] ic neuritis is well marked in both and there is a hæmorrhage above the left disc. The right optic neuritis looks of longer standing than the left, but the left appears to be increasing; there is much exudation above both discs. The right is seen with spher. + 3·5, left with + 3; there is more swelling of the right disc than of the left." On Nov. 16th there is the following note: "The palate is peculiarly insensitive, and the left side moves better than the right. There is perhaps slight weakness of the right orbicularis palpebrarum muscle. Face muscles the same on both sides. Fifth, no alteration on either side. On the right parietal region just above and behind the ear there is a slightly tender spot." Mr. Laurie H. McGavin, who saw the case in consultation with Dr. Russell Wells, agreed with the diagnosis and an operation was decided upon.

On Nov. 17th an operation was performed by Mr. McGavin. Chloroform having been administered, a large flap was turned down [illegible] region, the top of the [illegible] the superior curved l [illegible] from an emissary vein close to the mastoid. A trephine was placed over the cerebellar region and a piece of bone was removed. The dura mater bulged and there was no pulsation visible. The bone was removed with forceps until the greater part of the cerebellar area up to the middle line had been cut away, while above it was carried well up beyond the lateral sinus, so that the difference of tenseness of the dura mater above and below the tentorium, which was very striking, was seen. No tumours could be felt. The flap was replaced and the wound was dressed in the usual way. The patient stood the operation very well.

On Nov. 19th Mr. McGavin reopened the wound and the dura mater over the cerebellar area was removed. In doing this the lateral sinus was entered close to the middle line and the hæmorrhage was only stopped after the application of forceps. The cerebellum bulged extensively into the wound, but no tumour could be felt or seen. The patient lost a considerable amount of blood and a saline had to be administered per rectum. The wound was sutured and dressed, the forceps being left *in situ*, and the patient was sent back to bed. On the 20th salines, adrenalin, and calcium chloride were administered every four hours. The pulse was stronger, 112. The patient had been very restless and had tried to extract the forceps. On the 22nd Mr. McGavin, under chloroform, removed the forceps and plugging, but the hæmorrhage was so severe that they had to be replaced. The wound was dressed and was tightly bandaged. The patient became weaker but quieter, and the pulse was less rapid. On the evening of the 23rd the temperature went up to 102° F. and he became unconscious. The temperature continued to rise to 104°, and he died at 2.30 A.M. on the 24th with rapid obstructed breathing.

At the post-mortem examination a tumour was found on the right side which completely involved the auditory nerve and which extended right into the internal auditory meatus; the tumour was of about the size of a small cherry. On the left side a tumour of about the size of a chestnut was present which was pressing on the anterior part of the cerebellum, [illegible] 's side was only slightly involved [illegible] tretched out over the tumour. A [illegible] the falx cerebri.

[illegible] great interest, especially as the largest tumour was on the left side—that is, on the side on which the deafness was least marked. This is accounted for by the fact that the nerve had almost escaped on this side, whereas on the right side, where the deafness was almost complete, there was only a small tumour, but the nerve on this side was very extensively involved. The possibility of a second tumour on the left side never occurred to me, as I considered that the nerve deafness on that side was due purely to the increased intracranial tension which was evidently very great in this case. I think in this class of case careful testing of the ears before and after lumbar puncture would be of great value, as if only due to increased tension one might expect some improvement on the unaffected side, although should the condition on both sides remain the same, as it would have done in this case, then the question would arise as to whether there was a tumour on each side and whether the tension had been so great that the nerve had been *permanently affected, and in the absence of any other* symptoms pointing to a second tumour I am afraid the latter explanation in the present state of our knowledge would have to be accepted.

I am very much indebted to Mr. McGavin and Dr. Russell Wells for their great kindness in allowing me to publish this case, and to Mr. G. E. O. Williams and Mr. S. J. A. Beale for their very excellent notes of the case.

Harley-street, W.

A NEW METHOD FOR ATTEMPTING TO SECURE SPHINCTERIC CONTROL AFTER COLOSTOMY.

BY CHARLES RYALL, F.R.C.S. ENG.,
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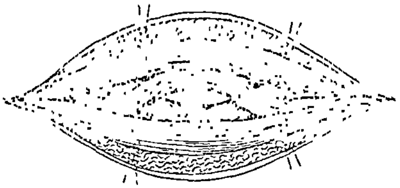
THE lack of sphincteric control is a great drawback to those who have to submit to a permanent colostomy. Many operations have been devised and carried out in order to get over this difficulty. Some of these have been found faulty and others are too complicated. The rectus abdominis is generally a well-developed muscle and remains fairly so in the majority of cases, until advanced emaciation is reached. Taking advantage of this fact, Howse performed colotomy by splitting the rectus vertically, and von Hacker carried out a similar procedure by splitting the fibres vertically and laterally and bringing the bowel through this oblique opening. This was performed with the hope of producing sphincteric control. The Maydl-Reclus operation of inguinal colotomy, where the layers of muscle were split and not divided, was an improvement on these as far as sphincteric control was concerned. All these operations were faulty, and this was in a great measure due to the spur operation being carried out and the difficulty of compressing and controlling the bulky spur. Since then Schinzinger, Braun, Weir, and others have dispensed with the spur by dividing the bowel, closing and dropping the lower segment into the abdomen, and trying to gain some sphincteric control over the upper segment by various operations more or less complicated. It is undoubtedly easier to control the upper segment alone than to attempt to do so with a spur. Recently Arbuthnot Lane has drawn attention to the advantage of drawing the upper segment through the rectus in those cases where the lower segment is either removed or else closed and dropped back into the abdomen. The rectus is a well-developed muscle and enables a good deal of control to be kept over a colostomy where the fibres are split vertically, but full advantage has not been taken of the value of this muscle as a means of making an artificial sphincter.



The method which I have resorted to appears to me to be original and is worthy of a trial. The rectus is split vertically and the sigmoid is drawn out and divided at a convenient point. The lower segment is closed and replaced in the abdomen. The upper segment is made less bulky by removing the appendices epiploicæ and freeing it of mesenteric fat, but without in any way interfering with its blood-supply. The artificial sphincter is then made in the following manner. A loop of muscle fibres is separated from the posterior aspect of the rectus on either side of the wound. Each loop is then drawn over to the opposite side of the wound, so that one loop overlaps the other. The overlapping loops thus form a ring and through this the bowel segment is drawn. Sutures are then inserted to keep the muscle fibres together above and below where the bowel comes through. Anchoring stitches are inserted through the skin and muscle inside to keep the bowel in position. The wound is then closed above and below the bowel and the cut edges of the latter are sutured to the skin. A double sphincter is thus formed consisting of longitudinal and circular fibres. The longitudinal fibres are those of the anterior portion of the rectus and the circular fibres are formed by the loops from the posterior part of the rectus. This operation can be modified by making double loops on each side and making them overlap one another alternately. A similar operation can be, and has been, carried out through the external oblique, and likewise can be done wherever the bowel is brought through muscle. A somewhat similar operation can also be performed for gastrostomy and appendicostomy.

Harley-street, W.

AN UNUSUAL CASE OF EXTRA-DURAL (PERI-SINUS) ABSCESS OF OTITIC ORIGIN AND ITS RELATION TO MELANCHOLIC STUPOR.

BY J. ARNOLD JONES, M.B., CH.B. VICT., F.R.C.S. EDIN.,
HONORARY ASSISTANT AURAL SURGEON TO THE MANCHESTER EYE AND EAR HOSPITAL.

ON Feb. 1st, 1908, I was summoned to see a woman of some 50 years of age, complaining of intense pain referred to the left ear, radiating over that side of the head, and of two or three days' duration. Since December, 1907, she had been under the care of mental physicians for melancholic stupor and had never had, to her own knowledge or to that of her family, any previous aural trouble. As a result of my examination a diagnosis of acute diffuse external otitis, probably following furunculosis, was made and the walls of the external canal were thoroughly incised. Before incision there was no visible discharge and no history of one, nor was there any constitutional disturbance, such as rise of temperature, &c. I saw her again in a week's time and the first thing that struck one was the marked improvement in her mental symptoms. Locally the pain had all disappeared and there was no tenderness, but there existed a copious discharge of pus. The walls of the external canal now admitted the introduction of an aural speculum, which disclosed to view a small polypoid granulation springing from the tympanum and filling the lumen of the canal, which was abnormally small. For some weeks the aural condition remained the same in spite of careful treatment, and the question of further operative interference then arose. The intensity of the otorrhœa suggested that more than the area of the tympanic cavity was involved and that the mastoid antrum and cells were affected; still, having regard to the short history of the attack, the complete subsidence of all acute symptoms, the alleged lack of previous trouble in the ear, and also to the absence of any other symptoms, I decided that conservative methods should be given a trial. Accordingly, on March 24th, under chloroform anæsthesia, I removed the tympanic polypus. The effect of this procedure was to increase the amount of discharge, which became so markedly out of proportion to the containing space of the middle ear that it was evident that carious processes were present in some other portion of the temporal bone. I therefore advised the performance of the radical mastoid operation. At this point it will be convenient to mention that the patient's mental symptoms had rapidly improved since the date of the first incision, and at the end of May, 1908, she was pronounced cured by her mental physicians.

On June 23rd I performed the radical mastoid operation which disclosed an interesting state of affairs. On the posterior wall of the osseous external meatus, situated about the centre of its long axis, was discovered the opening of a sinus The orifice of this sinus was about as large as the head of a good-sized pin, and upon tracing it backwards was found to lead through mastoid cells to the sigmoid groove. From this latter region about 1½ drachms of pus were evacuated, and the lateral sinus, itself normal, thoroughly exposed and cleansed. All cario-necrotic débris was removed from the antrum and cells which were thrown into one cavity by removal of "the bridge." There were no signs of caries of any portion of the labyrinthine capsule. The operation was completed in the usual fashion and an uneventful recovery under the care of her own medical attendant followed.

On August 1st I again saw the patient. The scar of the retro-auricular incision was hardly noticeable and the antro-tympanic cavity was lined with white shining epithelium, with the exception of a couple of small granulating patches posteriorly. On Oct. 2nd her own medical attendant examined the ear, and he wrote informing me that there was total absence of discharge, that the cavity was completely lined with epithelium, and that the patient's condition, both physical and mental, was excellent. I have just recently had news from him to the same effect.

There are many points of interest in this case, but the chief and overshadowing one seems to me to lie in the apparent relationship as cause and effect between the abscess and the mental symptoms of melancholia. A brief recapitulation of her mental attack will now be of service. The patient has had during her life several "nervous breakdowns." The earliest symptoms of definite melancholia were noticed in October, 1907, and consisted of depression and loss of sleep. These were followed by actual hallucinations, and late in December she was placed under the care of mental physicians. The diagnosis was that of melancholic stupor. On Jan. 17th, 1908, she became restless and agitated, and made many complaints of her physical condition for which there were no grounds. These symptoms became more marked until I first saw her on Feb. 1st, 1908, incised the walls of the external canal, and so established free drainage from the sinus in the osseous external meatus. From that date she quickly and steadily progressed to recovery, and late in May, 1908, was pronounced cured as regards the melancholia.

These are the definite facts of the case, and their interpretation is rather a matter for the mental physician than for an otologist. The local lesion may have been merely a concurrent event with the mental, but the sequence of cause and effect seems to me so striking as to justify the recording of the case. Here we have a lady with a certain amount of instability of the central nervous system described as "highly strung." Cario-necrotic processes of long standing are present in the temporal bone. An extra-dural abscess forms in the posterior fossa of the skull and melancholic symptoms occur. Then an acute exacerbation of the chronic mastoiditis takes place, the abscess tracks forwards, bursts through the posterior wall of the osseous external meatus, and sets up an external otitis. Drainage is established by incision, tension relieved, and the mental symptoms rapidly clear up.

A brief and necessarily imperfect reference to the literature of the subject discovers the following facts. Bianchi, translated by MacDonald in his standard text-book on "Psychiatry," sums up the whole situation when he says that "the pathological anatomy of melancholia is uncertain." Bernard Hollander[1] has collected about 50 cases, consisting of traumatic, inflammatory, and other lesions of the parietal area, and concludes from evidence adduced that a certain relation exists between the central area of the parietal lobe and melancholic states of mind. Two of his collected cases resemble my own, inasmuch as the melancholia was caused by brain abscess, the site of which, however, in both cases was the parietal lobe. Turner[2] demonstrated alterations of various degrees in the nerve cells and deduced arguments in support of the view that they were due to toxic impregnation of the nerve elements.

In my own case the site of the possible causative lesion differs from any I have found recorded. While others have discovered the parietal area to be at fault, in this instance the cerebellar region appeared to furnish the *fons et origo mali*. The explanation, however, must be left to those learned in mental physic, my own object having been accomplished in recording facts as I have observed them. *Ars medica tota in observationibus.*

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[1] Journal of Mental Science, 1901.
[2] Brit. Med. Jour., vol ii., 1901.

Manchester.

A CASE OF ABSCESS OF THE PANCREAS.[1]

BY SETON S. PRINGLE, M.B. DUB., F.R.C.S. IREL.,
SURGEON TO MERCER'S HOSPITAL, DUBLIN.

THE subject of inflammatory disease of the pancreas has of late years excited great interest among not only surgeons but also among experimental and chemical pathologists, and as it is only by a careful study of the conditions present in a great number of cases that a true symptom-complex of this very interesting disease can be arrived at, I think that all cases met with should be reported, be the outcome successful or unsuccessful. It is only by the use of the knowledge thus gained that we can hope to arrive at a satisfactory method of treatment. The following is a short description of my case with the post-mortem findings, as it unfortunately belongs to the category of unsuccessful cases, and I regret that space will not permit me to discuss the etiology and treatment in general.

The patient, a man, aged 46 years, was admitted to Mercer's Hospital on June 26th, 1908, complaining of severe abdominal pain and gave the following account of himself. For the last 20 years he had been a very heavy drinker and for the past 12 months he had vomited almost every morning, and as a rule his breakfast had consisted of a glass of whisky. Otherwise he had always been healthy. On June 15th the patient was seized with severe colicky pains in the left abdomen, chiefly in the region of the umbilicus; there was also some tenderness in the upper abdomen, but he said that the abdominal wall was quite soft though slightly distended. As his bowels had not moved for several days he took a purgative and was very considerably better on the following day, the 16th. From this until the 21st of the month he suffered constant pain in the abdomen but not of a severe character; the bowels remained constipated. On the 21st (i.e., the seventh day of the illness) he noticed that the pain had settled in the right side of the upper abdomen between the umbilicus and costal margin and that the abdominal wall was rigid. Diarrhœa also set in on that day and had persisted. The motions were yellow in colour and of a semi-fluid, pasty character. On the following days the pain gradually grew worse, but he was able to attend to his business until June 26th (twelfth day of the illness), when he was suddenly seized with acute pain and went immediately to the hospital, whither he was able to walk. He had vomited occasionally since the attack began, but at no time was it a marked feature and had not occurred for the last few days.

On my arrival at the hospital about an hour after the onset of the acute pain I found the patient lying on his back with his legs drawn up, sweating profusely. His face was flushed and anxious; his respirations were rapid, 30 a minute, and entirely thoracic; he evidently found it difficult to talk on account of the abdominal pain, and spoke in a jerky manner. His temperature was 98° F., his pulse was 100, and his tongue was dry and dirty; there was no jaundice. I found his abdomen distended and the whole abdominal wall absolutely rigid. He pointed to the right epigastrium as the seat of the pain, which also radiated down to the right iliac fossa and was apparently very severe. There was considerable tenderness in the umbilical and epigastric regions; percussion revealed a dull note over the upper two-thirds of the abdomen, the dulness extending into the flanks. I could not demonstrate the presence of free fluid in the abdominal cavity. As there was evidently peritonitis present I decided to operate at once, although a definite diagnosis as to the primary lesion was impossible. I suggested the possibility of a chronic duodenal ulcer which had perforated into a mass of adhesions on the 15th and that now the infection had spread through the limiting adhesions and was causing the acute peritonitis.

Operation.—As soon as the muscles relaxed under the influence of the anæsthetic I could feel a more or less rounded mass occupying the whole of the upper abdomen, the centre of the mass lying an inch or so above the umbilicus. After the usual preparations I opened the abdomen by a four-inch incision in the mid-line above the umbilicus. I then immediately saw that the tumour which I had palpated consisted of the pyloric part of stomach, duodenum, transverse colon, and some coils of small intestine all matted together, while the great omentum was turned up over the mass thus formed and was adherent to the under surface of the liver. The diagnosis also at once became evident, as typical patches of fat necrosis could be seen dotted over the great omentum, and I thus knew that I was dealing with a case of acute pancreatitis with probably abscess formation. There was a small quantity of blood-stained fluid in the peritoneal cavity. The great omentum was easily separated from the liver and turned down and I then saw a quantity of fresh fibrin gluing a coil of small intestine to the lower margin of the transverse colon. On separating the adherent coils at this point I opened directly into a large cavity full of brownish grey odourless pus streaked with blood. I at once plugged this opening with gauze without allowing any soiling of the general peritoneal cavity to take place and then sutured the edges of the parietal peritoneum to the coils of intestine around the opening into the abscess which was thus made to empty directly into the abdominal wall. The rest of the wound in the parietes was then sutured except at the upper angle, through which I inserted a wick of gauze leading down to the neighbourhood of the foramen of Winslow, where I had noticed a quantity of fresh fibrin. I then [illegible] the abscess and subst [illegible] voluminous dressing, [illegible]

Progress of the case.—The patient rallied well after the operation, and next morning he was free from pain with a normal temperature and pulse of only 112. There was a free discharge of the grumous material from the tube, the distension was less, and his general appearance very good. [illegible] took fluid nourishment [illegible]. I was rather pleased [illegible] y the condition continued good, but as there had been no movement of the bowels I ordered him that night a dose of castor oil. The next day he had nine semi-fluid pasty motions of a yellow colour. On the fifth day he vomited once a brownish fluid and was distinctly weaker. On the sixth he vomited several times and a hiccough also developed, so that I ordered his stomach to be washed out. From this time till his death on the twelfth day after operation the vomiting and hiccough continued. The latter was particularly irritating and proved uncontrollable, although his stomach was frequently washed out, and many drugs were tried. He gradually lost strength and was unconscious for some hours before death.

The character of the discharge changed completely in a few days after operation, and by the fifth day a great quantity of an almost clear viscid fluid was being poured forth. This secretion digested the abdominal wall round the wound, causing the latter to open to a large extent; this discharge continued to the end. There was a trace of albumin in the urine on the day of admission, but at no time could sugar be detected; a marked Cammidge "C reaction" was, however, obtained on the third day after operation. The course of the fever was irregular until the eighth day after operation, rising at times to 102°, and then remained normal till death. The pulse was as high as 150 on the sixth day and then gradually fell to the neighbourhood of 120 on the day of his death, the twelfth day after operation.

Post-mortem examination.—Unfortunately, permission for a full necropsy could not be obtained, and a hurried examination had to be made through the operation wound. On enlarging the opening through which the drainage tube had led into the lesser sac it was found that the head and body of the pancreas were represented by several dirty grey sloughs, while completely separated from these lay the tail of the gland. This was easily removed, but in doing so a second abscess cavity lying in the left loin was evidently opened into, from which escaped several ounces of brown, grumous material similar to that evacuated at the operation. No trace of the pancreatic duct could be discovered extending from the tail to the duodenum. There were no gall-stones present and no evident cholangitis. The stomach and duodenum showed marked evidence of catarrhal inflammation. There was no diffuse peritonitis. The specimens removed were handed to Dr. W. G. Harvey, who reports as follows: "The specimens consist of (*a*) a portion of the pancreas about four inches long, apparently the tail of that organ. This presents a fairly normal appearance to the naked eye, but on cutting into it a considerable amount of congestion becomes apparent, and many small areas of fat necrosis are seen scattered through it. (*b*) Several large pieces of slough resembling 'wash leather.' The surface of the end of the piece of pancreas which would lie towards the right in the body is rough and rather irregular in outline and evidently represents the line of separation of the slough from the surviving pancreas. Microscopically sections of the former portion show, on the whole, a remarkably healthy appearance. The glandular tissue stains well, but there is much congestion, a very considerable increase of connective tissue, and a marked thickening of the vessels. Sections through the extreme right end of this part, i.e., through the 'line of demarcation' show on the surface a narrow zone of necrosis, while under this the connective tissue appears more affected than the epithelial, strands of necrotic fibrous tissue passing some distance in between healthy gland substance. Here and there in these sections are seen localised areas of necrosis of the gland sharply marked off from the healthy tissue. The ducts show a severe catarrh. The fat in parts appears normally as clear spaces, but in parts many fat cells contain crystalline and amorphous deposits. Sections of the sloughs show a deep pigmentation of such few glandular elements as are still recognisable. The remainder is a homogeneous necrotic mass traversed by a few pink lines of connective tissue such as one sees in caseating gummata."

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[1] Abstract from a paper on Abscess of the Pancreas read before the Surgical Section of the Royal Academy of Medicine in Ireland on Jan. 8th, 1909.

In a review of the literature Mayo Robson[2] has been able to find reports up to 1907 of only 14 operations for abscess of the pancreas, with five deaths. Since then, however, Brewer[3] reports two successful cases of drainage for circumscribed pancreatic abscess. I regret that in this case I did not make a counter opening in the back at the left costovertebral angle and so drain the collection of pus which was discovered post mortem, although I do not see that a favourable outcome could have been expected considering the extent of the gangrene and the fact that all connexion between the surviving tail of the pancreas and the duodenum had been severed.

Dublin.

FOUR CASES OF CHRONIC MIDDLE-EAR SUPPURATION WITH INVOLVEMENT OF THE LABYRINTH.

BY MACLEOD YEARSLEY, F.R.C.S. ENG.,

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THE following four cases, which have occurred in my practice at the Royal Ear Hospital during the past 18 months, are all of considerable interest.

CASE 1.—The patient, aged 13 years, a scholar at the London County Council Residential Deaf School for Girls, had been deaf from double middle-ear suppuration, following scarlet fever at the age of three and a half years. The right ear showed a large perforation with a polypus protruding. On the left side the membrane was almost entirely destroyed and pus was coming from the attic. On Jan. 23rd, 1908, the radical mastoid operation was performed on the left ear. There was caries of the long process of the incus, and of the malleus only the head remained. The attic and aditus were filled by granulations. The polypus in the right ear was removed at the same time. The patient did well until the 25th, when the evening temperature rose to 100·2° F., falling the following morning to 98°; in the evening it rose to 100·6°, reaching normal on Jan. 27th, when the left ear was first dressed. On the 30th she was better in every way. That afternoon the radical mastoid operation was performed on the right side. No ossicles were found, the antrum was full of pus and granulations, and the tegmen antri was carious. On the 31st she was drowsy and vomited most of the day, the temperature rising until 6 P.M., when it reached 103·8°. There was a definite rigor at 2 P.M. She lay in a curled-up position, the knee-jerks were absent, but there was no rigidity and Kernig's sign was absent. There was distinct right lateral nystagmus. The dressings were removed and a drainage-tube was put into the antrum through the external meatus. Calomel, gr. v., and antipyrin, gr. x., were given. At 10 A.M. on Feb. 1st the wound was reopened and more bone removed. The dura mater was bulging and non-pulsatile; on opening, about half an ounce of clear fluid escaped. The brain was explored without result and the wound was redressed. The temperature fell to normal and by 4.30 P.M. the patient was more comfortable. Right lateral nystagmus persisted. She became worse at 6 P.M.; the temperature was 101·6°, the pulse was 96, and the respirations were 24, reaching 104·2°, 100, and 24 respectively at 8 P.M., when she had a rigor. She was sponged and given gr. ⅛ of morphia at 9.30 P.M. She became very noisy, talking and singing nursery rhymes all night. At 1 A.M. she began to pass everything under her. At 10.30 A.M. on Feb. 2nd the temperature was 101°, the pulse 96, and the respirations 24; she was again anæsthetised and a small cerebral hernia through the tegmen antri was removed. The brain was again explored and, during this exploration, the lateral ventricle was tapped, about two ounces of very foul, coffee-coloured fluid being evacuated. She died at 6 P.M. on Feb. 3rd, the temperature reaching normal and the pulse 88 after the last operation and rising to 103·4° and 146 just before death.

In deference to the wishes of the parent, the head only was examined by Mr. W. H. Bowen. Suppurative meningitis, due to infection spreading through the labyrinth, was found. There was an erosion through the superior semicircular canal with a corresponding perforation of the dura mater. In his report Mr. Bowen stated that "without a thorough clearing out of all the internal ear the disease could not have all been removed and even for this to be successful the operation should have been done months before." The stapes was intact and there were no signs of any lesion of the labyrinth at the time of operation. The lateral sinus and posterior fossa were intact.

CASE 2.—The patient, a boy, aged nine years, a scholar at the London County Council Deaf Centre at Somerford-street, Bethnal Green, suffered from discharge following measles in infancy. The left ear showed complete destruction of the tympanic membrane, the upper part of the tympanum being occupied by cholesteatomata, the lower part by granulations. On the right side the whole tympanum was full of granulations. Both ears discharged very foul sanious pus. The tonsils were hypertrophied and there was a large mass of adenoids. The boy had only vowel hearing on both sides. There was no nystagmus and Romberg's sign was absent. Coördinated movements were performed without any hesitation. On Feb. 6th, 1908, the right radical mastoid operation was performed. On clearing the antrum, aditus, and tympanum of much foul pus, débris, and granulations, it was found that there was a fistula into the external semicircular canal, the stapes was absent, and the margin of the fenestra ovalis was carious. The vestibule was opened by enlarging the oval window inferiorly, and the cavity was swabbed out with hydrogen peroxide and then with pure formalin. The operation was completed in the usual way, packing being done *viâ* the meatus.

The boy made an uninterrupted recovery, but had twitchings of the facial muscles lasting about two days after the operation. A left radical mastoid operation was performed on Feb. 9th, and a few days later both tonsils were enucleated and a large mass of adenoids removed. Functional testing on Jan. 21st, 1909, gave the following result: The bell was not heard by either ear; the open vowel "a" was heard on the left side when spoken very loudly close to the ear; Weber's test was lateralised to the left, and to the C 128 fork some bone conduction, but not reliably estimable, was present; that fork on the right mastoid was referred to the left. By air conduction no fork was heard by either ear.

CASE 3.—The patient, a female, aged 22 years, sent by Dr. C. C. Gibbes, had suffered from double otorrhœa on and off since measles in childhood. Since July, 1907, the discharge from the right ear had been very offensive and sanious. About the middle of September, 1907, she had an attack which was described as "inflammation of the brain"; she was attending a meeting and fell forward suddenly from her chair and was carried home unconscious. Until December she was very ill, but no clear details of her symptoms were obtainable, save that vertigo, vomiting, and tinnitus "like being in a railway station" were prominent. The only information as to the form of her vertigo, was that in March, 1907, she had a sudden attack which caused her to fall towards the right. When seen on April 29th, 1908, she was obviously ill. The left ear was discharging slightly, the lower part of the membrane was destroyed, and the malleus hung free. The right meatus was full of very foul pus, stained with blood, and on cleansing large polypoidal masses blocked the inner end. She heard well on the left side, but was apparently quite deaf on the right. She was, however, too ill to be tested. There was no nystagmus, the temperature was 98° F., and the pulse 100. She was at once admitted, and next morning the temperature and pulse were 97° and 80.

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[2] Mayo Robson and Cammidge: The Pancreas, its Surgery and Pathology, 1907.

[3] Brewer: Surgery, Gynæcology, and Obstetrics, September, 1907.

On April 30th a radical mastoid operation was performed. On reaching the antrum very offensive curdy pus was found, and, as the opening was being enlarged, it escaped as if it were being pumped out. On removing the bridge and clearing the antrum and attic of much granulation tissue it was found that the inner antral and tympanic walls were occupied by a bed of soft granulation tissue, across which the facial nerve lay exposed. No ossicles, either malleus, incus, or stapes, were found. Loose sequestra were felt and removed, great care being exercised to prevent injuring the nerve. Two large ones and two small ones came away easily. The former comprised a part of the vestibule, with the openings of the semicircular canals, and a much eroded portion of the promontory. Under the latter was found a small piece of the modiolus and lamina spiralis ossea. The condition of the patient being such as to render it inadvisable to complete the operation, the wound was lightly packed from the incision, and a few days later a flap was fashioned, the incision sutured, and the operation finished in the usual way. The patient has made an uninterrupted recovery, but as the exposed facial nerve became surrounded with organising tissue, facial paralysis appeared and gradually became worse.

Case 4.—A girl, aged 12 years, was sent to me on Jan. 13th, 1909, by Mr. H. L. E. Wilks of Salisbury, with a note to say she had been under his care at the Salisbury Infirmary "with an acute mastoid one year ago." He had operated and removed some carious bone and established a communication with the middle-ear. The acute symptoms had subsided, but there had lately been a purulent discharge from the external meatus. I have, I regret to say, been unable to obtain any further information as to the original condition of the child from Mr. Wilks. On examination there was found a profuse, offensive, watery discharge from the right ear, the meatus of which was stenosed. The membrane was destroyed except Shrapnell's portion, the inner tympanic wall covered with fine granulations. There was tenderness over the antrum. The temperature was 100° F. and the pulse was 102. No nystagmus could be elicited by the caloric test and no history of giddiness could be obtained.

On Jan. 15th, 1909, a radical mastoid operation was performed, the incision passing through the scar left by the former operation. No sign of the latter could be found in the bone, save a small pit just behind the spine of Henle. Both antrum and aditus were large and full of granulations The head of the malleus was found, but both incus and stapes had disappeared. A fistula over the prominence of the external semicircular canal, large enough to admit easily a probe, was seen, and the latter instrument, given a suitable curve, passed into the tympanum through the vacant oval wi[illegible] Case 2 —viz., [illegible] low the oval wi[illegible] ollowed by formalin. The case has progressed without any unfavourable symptoms. On functional testing (Feb. 15th, 1909) she apparently heard well in the right (operated) ear, but on using Bárány's noise-producing apparatus to the left ear it was clearly demonstrated that this hearing was entirely supposititious.

Each of these cases is of considerable interest. In the first there were no symptoms specially leading one to suspect the presence of any grave labyrinthine condition on the right side, and had that ear been opened up first it is questionable from the condition found post mortem whether she could have been saved. There were, however, no guiding symptoms to lead to a decision as to which was the worse ear. It is extremely probable that the removal of the polypus lead to a lighting-up of the labyrinthine condition and consequent meningeal infection. Several years ago I had under my care a woman, aged between 40 and 50 years, in whom both ears were filled with granulations. As the mastoid operation was refused absolutely I curetted both ears (the only operation to which she and her friends would consent) and she succumbed to suppurative meningitis three days later. The infection was found to have reached the meninges *viâ* one labyrinth. This case was probably similar to that of Case 1. I would point out the difficulty of obtaining reliable information from deaf-mutes or their relatives which would lead to a suspicion of the true condition. The lesion found in Case 1—viz., erosion of the superior semicircular canal—is decidedly uncommon. I regret that no tests were made as to the condition of the labyrinthine function, but at the time I saw this case I was unacquainted with the work of Bárány and others.

The history of Case 3 showed that this patient was attacked by acute labyrinthine suppuration during chronic purulent middle-ear disease, and it is interesting as showing to what extent such a condition may pass without causing intracranial complications. There are several cases on record in which complete necrosis of the labyrinth has taken place, notably that by Hugh E. Jones[1] of Liverpool. The ensuing facial paralysis was regrettable but unavoidable under the circumstances; it did not appear until the nerve became pressed upon by the new-formed cicatricial tissue. I have proposed a grafting operation to the patient, but this she refuses.

Cases 2 and 4 are very similar. In both there was erosion of the external semicircular canal, with loss of the stapes; in neither was the condition suspected before operation was undertaken. The method followed—viz., opening the vestibule by removing the outer wall below the fenestra ovalis (to which the term "inferior vestibulotomy" has been applied)—appears to me to be the best way of dealing with such cases; it ensures drainage at the lowest part of the vestibule and is in full communication with the canals (as shown by the bubbling of the peroxide of hydrogen through the erosion in the external canal), and is well away from the facial nerve. There is no need, in my opinion, to enlarge the fistula into the canal (so-called "superior vestibulotomy"), as the lower opening gives all the necessary drainage and to do so would endanger the nerve. It is possible that both these cases might have done perfectly well had the vestibule been left untouched, but considering the usual surroundings of the individual patients it was unwise to take the risk.

Case 4 further opens up an interesting point—that of hearing when the stapes has been lost or the labyrinth damaged. Owing to the relatively badly developed sense of sound direction in man, coupled possibly with hearing by bone conduction, such patients often appear to hear quite well with the damaged ear, even when the good ear is carefully sealed. In such cases Bárány's noise-producing apparatus becomes a valuable instrument and is the only method by which reliable evidence as to the true hearing can be obtained.

Harley-street, W.

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[1] Transactions of the Otological Society of Great Britain, vol. iv., p. 5.

University of Sheffield.—The council of the University have appointed Mr. Arthur M. Connell, F.R.C.S. Edin., to the Lectureship in Practical Surgery, in succession to Mr. George Wilkinson.

The Educational Benefits of Travel.—The Orient Line of Mail Steamers to Australia has offered to grant annually free first-class return passages to a limited number of graduates from the Universities of Sydney, Melbourne, and Adelaide who are desirous to visit Europe to continue their studies. The disposition of these privileges has been left entirely [illegible] of the councils of the respective universitie[illegible] intended to multiply [illegible] the privilege be preferentially conferred on graduates who are debarred from studying in Europe by reason of the expense involved, rather than on the holders of any particular university distinction.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Red Degeneration of a Uterine Fibroid.—Unusual Solid Tumour of the Ovary.—Fœtal Chondro-dystrophia.—Primary Chorion-epithelioma of the Ovary.—Rudimentary Uterus Didelphys.

A MEETING of this section was held on June 10th, Dr. HERBERT R. SPENCER, the President, being in the chair.

A short communication was read by Mr. J. BLAND-SUTTON on Red Degeneration of a Uterine Fibroid associated with staphylococcus pyogenes aureus infection.

Mr. G. F. DARWALL SMITH read a short communication on an Unusual Solid Tumour of the Ovary. The patient from whom the tumour was removed was a multiparous woman, aged 36 years. She was found to have a rounded, solid tumour in the right posterior quarter of the pelvis of the size of a man's fist. This was removed, and on examination the tissue of the ovary could be seen to be stretched as a capsule over the substance of the tumour proper. The cut surface of the tumour looked like an ovarian fibroma. On microscopical examination, scattered about in the fibrous stroma were seen strands of cells resembling glandular epithelium. Some of these cells showed degenerative changes. The diagnosis seemed to lie between endothelioma and adenofibroma.—Dr. W. S. A. GRIFFITH mentioned that he had removed a similar tumour of the right ovary with similar microscopical characters. The tumour showed clinically no signs of malignancy.

A short communication by Dr. KEDARNATH DAS on Fœtal Chondro-dystrophia as a cause of brow presentation and dystocia was read, and notes of two cases of this condition were given.

Dr. J. S. FAIRBAIRN read a paper on Primary Chorion-epithelioma of the Ovary. The paper was based on the case of a woman who had had four pregnancies, the last in February, 1905, when the placenta was removed by hand and the convalescence was protracted. For some months before admission to St. Thomas's Hospital there had been slight, but continuous, uterine hæmorrhage, and for about six weeks abdominal pain, chiefly on the right side. A tender swelling in the abdomen had been noticed by the patient for about three weeks and was the reason for her seeking advice. This was thought on examination to be an ovarian cyst with torsion of the pedicle, but at the operation on Jan. 3rd, 1907, it was found to be a hæmorrhagic tumour of the left ovary with extensive adhesions, but no twisting of the pedicle. It was removed and also the right ovary, which was cystic and involved in adhesions. The patient showed no signs of recurrence two years after operation. Other cases of primary chorion-epithelioma in the ovary were discussed. Seven collected by Pick, and others by Michel, Schmaus, and Kleinhans were mentioned, but particular attention was directed to two from Doederlein's klinik which occurred in multiparæ, and appeared to be very similar to the one described. Three possible explanations of the origin of chorion-epithelioma primary in the ovary offer themselves: (1) It may arise, as in Pick's cases and as in chorion-epithelioma of the testicle, from teratomatous elements; (2) it may arise from a preceding ovarian pregnancy; and (3) it may be due to transportation of villi from a preceding pregnancy, molar or otherwise. The present case and Doederlein's two were considered as in a class by themselves and as differing from Pick's in that his series included many younger patients (ages 9, 16, 17, 21, 24, 30, and 36), that all except one were nulliparæ, and that there was more definite evidence of a teratomatous origin in the mixed nature of the tumour elements and in the extreme malignancy of the growths. Any further discussion as to the origin of such primary growths must be purely speculative, but as suggesting a possible origin from transported villi attention was directed to the fact that in two of the three cases specially considered it was found necessary to remove the placenta manually in the labour immediately preceding the illness.

Dr. W. BLAIR BELL read a paper on a case of Rudimentary Uterus Didelphys with ectopia of each uterine body in an inguinal hernia sac, with some remarks on the development of the female genital organs. The patient was a young woman, aged 20 years, who had had a double inguinal hernia all her life. Lately there had been attacks of abdominal pain, which caused her to seek advice. The patient was found to be well developed and intelligent. She had never suffered from monthly molimina. The external genitals were normal in appearance and covered with hair. There was total absence of the vagina, but a circular fringe indicated the formation of a hymen. Per rectum no pelvic genital organs could be detected. At the operation a central sub-umbilical incision was first made in order to investigate the state of affairs. There was a smooth and uninterrupted vesico-rectal pouch. Above the true pelvis on either side there was a large hernial orifice. Protruding down the right aperture was the Fallopian tube and ovary; on the left side only the fimbriated extremity of the tube was visible. An incision was next made over the left inguinal canal, and the hernial sac—together with the left uterine body, which was firmly incorporated with it, and the Fallopian tube and ovary—was removed, and a radical cure effected. On the right side the hernial sac and the uterine body were separated from the Fallopian tube and ovary and removed, a radical cure of the hernia being then carried out. The patient made an uninterrupted recovery. On histological examination the left ovary was found to be functional. The conditions of uterus didelphys and hernia of the uterus were discussed and their relative importance considered. The rarity of actual ectopia of uterine bodies, such as was found in the case described, was mentioned, the only other similar cases on record being those of Roux and Werth. Finally, the "descent" and development of the genital organs was considered in so far as the malformation found in this and other cases seen and mentioned by Dr. Bell were concerned.

OPHTHALMOLOGICAL SOCIETY.

Congenital Displacement of Lenses.—Congenital Opacities of Lenses.—Retinal Disease with Massive Exudation and Arterio-venous Communication.—Epithelial Filament simulating a Threadworm in Anterior Chamber of the Eye.—Report of International Committee on Unification of Notation of Visual Acuity and of Meridians of Astigmatism.—Exhibition of Cases.

A MEETING of this society was held on June 10th, Mr W. H. H. JESSOP being in the chair.

Mr. P. E. H. ADAMS read two papers, the first on a family with Congenital Displacement of Lenses. The series consisted of a mother and seven out of her nine children who suffered from this condition, but no other instance could be found in the family. In three of the cases the lenses were displaced downwards instead of the more usual displacement upwards, while in the eldest boy the dislocation was complete, thus leaving the pupil clear of the lens. The two members of the family who were unaffected had perfectly normal eyes. The second paper was on a family with Congenital Opacities of Lenses. In this family the great-grandfathers, grandmother, father, and four of his children (out of five), as well as the father's sister, showed the peculiar opacities of the lens known as stellar cataract. Posteriorly there were from three to eight primary rays and numerous secondary ones, while some of them showed Y-shaped markings on the anterior surface as well. The opacities slowly increased throughout life, especially in the front of the lens, while the posterior markings were broader and less defined.

Dr. A. HILL GRIFFITH and Mr. A. W. ORMOND communicated a paper entitled, "A Case of Retinal Disease with Massive Exudation and Arterio-venous Communication." The patient was a female, aged 31 years. The left eye had been removed for secondary glaucoma by Dr. Griffith ten years ago. The fundus of the remaining eye showed very tortuous and distended retinal vessels, with varicosity of several of them and a red blurred optic disc. In the extreme periphery of the fundus, deep to the retinal vessels was a whitish mass, the limits of which could not be seen. Issuing from the anterior border was a large vein and running to it an artery somewhat similar in size and colour. The changes in the fundus were probably all due to vascular disease. The interest in the case was furthered by the fact that the other eye of the patient was removed for secondary glaucoma simulating an intra-ocular growth, and on examination it proved to be a case of extensive sub-retinal exudation with retinal detachment and an old organising hæmorrhage, but no growth. The patient's sister also lost an eye from a similar cause and the same condition was found on pathological examination.

Dr. **George Mackay** reported a very unusual appearance, an Epithelial Filament simulating a Threadworm in the Anterior Chamber of the Eye of a girl, aged seven years. The child had always enjoyed good health, had no special illness, had never suffered from worms, and had not complained much about the eye. The filament had been first noticed when she was eight months old. No independent movement had ever been detected in it, but the parents were under the impression that it was slowly increasing in size. The eye was occasionally a little irritable, with a tendency to lacrymation, and a trace of ciliary injection. The tension was normal, the media otherwise transparent, and the fundus healthy. The pupil responded to light, though less mobile below than above. At the periphery of the iris, close to the anterior chamber angle, between the 5 and 6 o'clock meridians, a buffy-grey filament about a millimetre in diameter emerged between the fibres of the iris, ascended in close relation to the posterior aspect of the cornea for 3 or 4 millimetres, then bent backwards towards the lower border of the pupil, and crossing the vertical meridian of the anterior chamber appeared to rest lightly in contact with the sphincter surface of the iris. Thereafter it bent downwards once more, following the plane of the iris nearly in the 7 o'clock meridian. The structure terminated in a slightly bulbous free extremity which did not re-enter the iris nor extend to the angle of the anterior chamber. The arched filament had thus a slight spiral twist from before backwards. The refraction of the eyes was about emmetropic. The vision of the right eye $\frac{6}{12}$ fairly, and the left $\frac{6}{6}$. The child was put under chloroform, and through an incision made at the corneo-scleral junction, a little to the nasal side of the filament, the foreign body was successfully removed, though breaking into two pieces on account of its brittle structure. From the pathological examination made by Dr. Theodore Shennan of Edinburgh and Mr. A. E. Shipley of Cambridge no confirmation was obtained of the presence of a parasite. Microscopic sections showed that the filament was mainly composed of stratified epithelium, with a little loose connective tissue and some melanine pigment. Discussion was invited as to its probable origin—e.g., in a congenital displacement of part of the epithelium from the anterior surface of the iris or a capsulo-pupillary vestige.

Mr. **Jessop** gave a report of the International Committee on the Unification of the Notation of Visual Acuity and of the Meridians of Astigmatism. The committee, after consideration, came to the following conclusions:—1. That the meridians of astigmatism should be measured and represented as the observer looked at the patient. 2. That the axes should be measured and represented in the lower semi-circle of the trial frame. The numbering of the axes should start from the middle line of the face in each eye, and proceed downwards and temporalwards. The zero would therefore lie at the nasal end of the semicircle and 180° at the temporal end; 90° would be below and midway between these points. The committee also agreed that for international test type numbers should be used. Landolt's ring was also thought to be a suitable object. The unit of measure was an angle of 1 minute, and the figures were to be constructed on this unit. The types were to be constructed as regards size on arithmetical progression, and the standard distance at which they were to be seen should be 5 metres. The source of light was to be diffuse daylight, if possible, opposite the types, and not laterally.

The following cases were shown:—

Dr. **A. Freeland Fergus**: A case operated upon for Paralytic Ptosis by his method of resection.

Mr. **J. Herbert Fisher**: An Unusual Form of Cataracts (Bilateral) in a girl.

Mr. **Jessop**: A case of Bilateral Ptosis with complete Ophthalmoplegia Externa.

Mr. **W. M. Bergin**: A case with a Unilateral Swelling.

Mr. **C. S. Blair**: A case of Pemphigus of the Conjunctiva.

Mr. **Herbert Bell**: A case of Unusual Elastic Adhesion between the Iris and the Cornea.

Mr. **Arnold Lawson**: (1) A case of Double Iridectomy for Congenital Glaucoma by the method of Lagrange; and (2) a case of Congenital Glaucoma treated by Langrange's iridectomy.—This case was discussed by Dr. **Weeks** (Philadelphia), Mr. **G. T. Brooksbank James**, Mr. **E. Treacher Collins**, Mr. **Odillo Maher**, and Mr. **F. R. Cross**.

Medico-Legal Society.—A meeting of this society was held on June 22nd, Dr. James Scott being in the chair.—Mr. H. Wippell Gadd read a paper on the Poisons and Pharmacy Act, 1908, in Relation to Public Health and Safety. The speaker criticised the Act in detail, drawing particular attention to Section 2, which empowers persons other than qualified chemists and medical men to sell certain poisons. Mr. Gadd showed how inconsistently the Act had been interpreted by the local authorities empowered to grant licences to unqualified applicants.—Dr. S. B. Atkinson, Dr. Hubert Biss, Mr. R. A. Robinson, Mr. W. C. Williams, and Dr. Scott joined in the discussion.—Mr. Roland Burrows, LL.D., read a paper on the Law of Exhumation. The law relating to the disposition of the dead was, he said, most unsatisfactory. A curious duality ran through it which alone tended to cause confusion. Exhumation was so unusual that comparatively few people had any knowledge of the law relating to it. The motives actuating civilise nations in disposing of their dead—religion, reverence and public health—were not necessarily consistent. All c them had had influence on the law. Nowadays public healt appeared to be the dominating influence. Until 750 A.D., whe Archbishop Cuthbert introduced the custom of churchyar burial, burial in or near a church was only accorded to person of special sanctity. Even then it was not until after the Reformation that the exaction of burial fees by clergyme ceased to be regarded as an offence against the law of God The custom of churchyard burial, however, though general was never a binding rule. Neither the canon nor the commo law required the body to be placed in a coffin; nor was ther any rule as to the material of which the coffin was to be constructed. The duty of burial as imposed by the law was t convey the body decently covered and in a reverent manne to a place of sepulture and, in like manner, to bury it. Tha duty rested on the person having control over the body *Prima facie*, it was the executor or administrator; but th relatives, and even the householder under whose roof th body lay, incurred the obligation. The only excuse wa poverty. The duty, however, was overridden by the paramount duty not to do anything to avoid an inquest or t conceal a crime. The deceased had no power to regulat the place or manner of his burial except that he might forbi cremation and had certain powers to devote his body fo anatomical study under the Anatomy Act, 1835. Exhumation might lawfully take place under a faculty an a licence other than under the law of inquests. I five case it could take place: (1) the investigation o the cause of death of the person buried; (2) when th land was devoted to other uses; (3) under the Burial Acts for the protection of the public health; (4) to give effect t the wishes of the deceased or relatives as to the place o burial; and (5) incidentally, for purposes not directl relating to the cause of death. Mr. Burrows supported hi paper with numerous decided cases, and also referred t instances where opposition had been made to exhumatio orders. In conclusion, he urged that the law on the subjec stood in urgent need of reform.—Discussion followed, in which Lord Russell, Dr. Atkinson, and Dr. Scott spoke.

The New Vaccination Law in Burma.—The Burma Vaccination Law Amendment, 1909 (Burma Act 1 of 1909), was brought into force on May 24th, 1909. Section 9 of the Act, which gives power to require persons on board vessels on arrival at the port of Rangoon (who have travelled on board such vessel for the purpose of coming to Burma to work as labourers) to be inspected, and if found unprotected to be vaccinated, will until further notice be put into force in respect of vessels arriving from Calcutta only.

Reviews and Notices of Books.

Report on the Prevention of Malaria in Mauritius. By RONALD ROSS, C.B., F.R.S., D.Sc., LL.D., &c., Professor of Tropical Medicine in the University of Liverpool and the Liverpool School of Tropical Medicine. London: J. & A. Churchill. 1908. Pp. 202, with 25 photographs and a map. Price 5s. net.

AT the request of the Governor of Mauritius, conveyed through His Majesty's Secretary of State for the Colonies, Professor Ronald Ross visited Mauritius in 1907 with a view to advise measures for the prevention of malaria, the disease having shown of late years a tendency to increase, no fewer than 5827 deaths having been ascribed to that cause during 1906. He remained three months in the island collecting information and investigating the local conditions associated with the malady. This report, as might have been expected, is a most valuable and exhaustive work, treating the whole subject from all points of view. Before discussing the circumstances of malaria in Mauritius the author sets out in simple terms, mainly for the benefit of non-medical readers, a summary of modern views respecting the malady. There is also a historical account of the behaviour of the disease in Mauritius, and from it we learn that Professor Ross is of opinion that in all likelihood malaria was not endemic in the colony before 1865. The particular mosquito responsible for transmitting the malady in Mauritius is the Pyretophorus costalis, which was probably brought to the island by some ship. With the importation of Indian coolies to labour in the sugar plantations infected persons arrived in considerable numbers. So that with local conditions favouring the multiplication of the mosquito, and with a supply of infected persons whose blood contained the parasites of the disease, malaria rapidly extended in the colony, giving rise in 1866 and 1867 to the terrible epidemic which carried off in 1868 alone no less than one-fifth of the entire population, leading some persons to take the view that the disease in question was not malarial fever at all, but plague or cholera, so great was its virulence. Professor Ross in his recent inquiry adopted as his index of malarial prevalence the number of children under 16 years suffering from enlarged spleen; and he points out that malaria will not remain in a locality unless the carrying agent, the anophelines, are numerous, unless there are enough infected persons to infect the carriers, and if the insects are prevented from biting human beings.

Keeping this in view, Professor Ross summarises preventive measures under the following headings: anopheline reduction, case reduction, and isolation. As regards anopheline reduction, he points out the value of drainage in removing surface waters, which favour the breeding of the insects. In respect of case reduction he urges the continued use of quinine, which removes, or, at least, diminishes, the number of available parasites in the blood. And as regards isolation, or protection from mosquito bites, he discusses the protection to be derived from culicifuges, such as oil of lavender applied to the skin; the use of mosquito nets, especially at night; the wire-gauze screening of windows and verandahs where practicable; and the covering up of the exposed skin by veils and gloves. He places the greatest importance upon reduction of mosquitoes, which can be attained either by major works of drainage of marshes and clearing out of overgrown watercourses, or by minor works which comprise the systematic searching out of smaller breeding grounds of the mosquitoes, the filling up of pools or hollows, and general attention to the sanitary surroundings of the people. He quotes instances where malaria preventive measures have been successfully carried out, as, for example, at Ismailia, the Federated Malay States, Hong-Kong, and the Panama Canal zone. Finally, he recommends that in Mauritius a periodical spleen census of children in schools and on estates should be taken to note the number with enlargement of that organ; treatment by quinine of all children suffering from enlarged spleen; continuous house-to-house distribution of quinine when necessary; house protection by nets and wire-gauze screens where possible; continuous efforts for reduction of mosquitoes by major or minor works; and the establishment of a suitable organisation to carry out all the malaria preventive measures which shall be directed by a responsible chief officer who should present to the local government an annual report on malaria in the colony. The cost of these measures is estimated at £9000 per annum.

A number of appendices and addenda are placed at the end of the report, which is well worth the study of all who wish to acquaint themselves with the most modern methods of combating malaria.

Inborn Errors of Metabolism. By ARCHIBALD E. GARROD, D.M., M.A. Oxon. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 168. Price 3s. 6d. net.

THIS work is in substance the Croonian lectures delivered before the Royal College of Physicians of London in June, 1908, and published in THE LANCET shortly afterwards. They are now arranged in chapters with new matter added. It is said that "in any phenomenon of nature there is something of the marvellous;" this work shows that this is true and that it is manifest in the metabolic processes in living beings. Behind an apparently superficial uniformity exists a diversity no less real than that which is sometimes so obvious in structural anomalies, only this diversity being chemical and not morphological is much more difficult to examine. The inborn errors of metabolism specially dealt with are albinism, alkaptonuria, cystinuria, and pentosuria. The recent advances in chemical physiology have made possible the successful investigation of these obscure metabolic phenomena. We now know that each animal manufactures its own specific proteins and that special enzymes exist for special purposes. That great medium for the excretion of metabolic products—the urine—contains many substances which rank as abnormal constituents, which, however, are present in traces as by-products of metabolism; even such substances as cadaverin and hæmatoporphyrin have been discovered to be normally present in it. The author leaves aside that conspicuous group of maladies classed as "diseases of metabolism"—e.g., gout, obesity, and diabetes. Of those he deals with some are, and all of them probably are, present from birth, and, with one exception, bring in their train no serious morbid effects, do not call for treatment, and are little influenced by any therapeutic measure. One is tempted to regard them as four "metabolic sports"—the chemical analogues of structural malformations. That albinism is congenital and persists through life and is certainly harmless is well known. Alkaptonuria persists through life and is in the great majority inborn, though it may sometimes appear in disease; the evidence of cystinuria being congenital is more difficult to obtain; and as to pentosuria, discovered only in 1892, its inclusion is justified on other grounds, and evidence is accumulating of its harmlessness. Of all the four, Dr. Garrod's experience leads him to the belief that cystinuria is the least rare, and the only one of the four which can be classed as actually injurious, but even these effects are secondary. Another feature of this group is the liability for each of them to occur in several members of a family, most often in collaterals of the same generation born of normal parents; though in this respect they do not stand alone. There is some evidence of a special liability of the Jewish race to pentosuria.

Albinism has for its essential phenomenon the absence of pigments of the melanin group, but there is more than this, for it has been found that intravascular injections of nucleoproteins do not produce such intravascular clotting in the subjects of albinism as they cause in normally pigmented subjects. The Norway hare, when in its winter albino coat, behaves as an albino when injected with nucleo-protein.

The urine of an alkaptonuric—a very rare anomaly—seldom shows anything abnormal when freshly passed, but quickly darkens in contact with air, a phenomenon which is associated with the absorption of oxygen. Our knowledge of this anomaly only dates from 1858. Some alkaptonurics in later life develop a peculiar inky blackness of the cartilaginous structures—called by Virchow ochronosis—a condition that may also be produced by the prolonged absorption of carbolic acid. The excretion which is the essential feature of alkaptonuria is homogentisic acid with the empirical formula $C_8H_8O_4$, and the error of metabolism to which its presence is due is a failure to deal with the aromatic fractions of proteins, both of the food and tissues, in the ordinary way.

The chapter on cystinuria is both full and suggestive, and in it there is given an excellent account of the sulphur metabolism of the body. Like other inborn chemical errors, cystinuria occurs with greater frequency in males than in females. Its persistence and frequent transmission from generation to generation in a family are striking characteristics. The study of cystinuria leads the author to give an account of the chemistry of proteins and the amines, which are now known to play such an important part in the constitution of the protein molecule. Both cystinuria and alkaptonuria may be classed as an arrest rather than as a perversion of metabolism.

It was only in 1887 that arabinose was found to be a pentose—formerly it was placed in the hexose group—and not till 1892 was a pentose found in the urine, and most of the recorded cases have been met with in Germany. It is also a very rare anomaly and is not necessarily associated with any morbid symptoms, and there is a growing opinion that it is itself harmless and calls for no treatment. In a considerable number of cases there have been symptoms of neurasthenia.

The whole work is a thoughtful exposition of chemical problems of great complexity manifesting themselves in the sphere of the physician. To the elucidation of these problems the author brings all the knowledge of a thorough master of this branch of organic chemistry, as well as the observant and critical powers of a scientific physician.

Clinical Diagnosis: a Text-book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., late Resident Physician, the Johns Hopkins Hospital. Second Edition. London and Philadelphia: J. B. Lippincott Company. Pp. 686. Price 21s. net.

DURING the past 20 years many excellent text-books have been written on "clinical diagnosis"—that is to say, on the clinical examination of the blood, the urine, and the gastric contents. There has naturally been a tendency for those observers working in the clinical laboratories to regard microscopical and chemical examinations apart from the actual patients from whom the various specimens were derived; in other words, only to deal with disease *in vitro*. To avoid the errors to which such a course is liable Dr. Emerson has made a point of considering work done in the laboratory from the clinical rather than from the purely laboratory point of view. That he has succeeded in writing a useful manual is proved by the fact that, although the work first appeared in 1906, a second edition has already been called for. In preparing this edition the efficiency of the volume as a practical work for medical practitioners and students has been raised in every possible way. Fully one-half the work has been re-written, resulting in a considerable increase in the number of pages. This enlargement has permitted the incorporation of much new matter throughout, including the bacteriology of the sputum and urine. This will add materially to the usefulness of the volume as a working handbook.

The first subject considered is the examination of the sputum, and here the microscopical characters of the morbid constituents are particularly well and minutely described. The various forms in which the epithelial cells of the alveoli may be met with are fully discussed, especial mention being made of the myelin globules and "drops," and of the "Herzfehlerzellen." The last-named is the term given to the cells filled with a golden yellow pigment; they only possess diagnostic importance when they occur in large numbers and over a long period of time. The granules are sometimes small, but often large. They have a translucent appearance, are not opaque; and certain cells seem to be diffusely stained. In chronic passive congestion, especially that due to mitral disease, these cells may give a gross colour to the sputum, the entire mass being of a rusty colour.

An excellent account is given of the clinical examination of the urine. The remarks on albuminuria are especially worthy of attention. The author discusses at length the occurrence of "albuminuria without definite renal lesion." With Spiegler's reagent it is hard to find an individual whose urine is really free from albumin. This being the case, there is no distinct line between physiological and pathological albuminuria except that of amount. Dr. Emerson defines "albuminuria" in these circumstances as "a condition in which serum albumin may be detected by the tests accepted in common use as standards, and the cases with small amounts of albumin which pass unnoticed by these tests and require special technique are not included." He quotes Hofmeister as saying that if Heller's test shows no ring in three minutes the urine is to be considered albumin-free. We endorse these remarks. The presence of minute quantities of albumin, recognisable only by reagents which are not employed in ordinary clinical work, corresponds to the presence of sugar in equally negligible amount as demonstrated by such a delicate test as safranin. Strange to say, this substance is not mentioned by Dr. Emerson as a test for glucose, although very accurate quantitative estimations may be made by its employment.

In discussing functional albuminuria, its occurrence amongst athletes is mentioned. Macfarland found this condition present in practically every football player whom he examined, but the albuminuria lasted for the most part only three or four hours. The same constituent is found in the urine of men taking part in other forms of athletics, bicycle riders and mountain climbers, those persons who exercise severely the leg and thigh muscles, especially to a degree beyond that to which they are accustomed; later, they are able to stand an equal amount of exercise without the albumin making its appearance. Dr. Emerson maintains that it is "only a question of limit; practically everyone can if he will produce albuminuria if he only over-exerts himself sufficiently." The occurrence of albuminuria following upon violent emotion or an unusually heavy proteid meal is also discussed, and the difficulties which may arise in assigning a physiological explanation are largely cleared away.

The chapter on the examination of the blood maintains the high standard shown in the rest of the work. The varieties of the white blood cells are described at length, and the characteristic blood changes found in the primary and secondary anæmias receive full attention. The technique necessary to obtain the opsonic index is given, but the full significance of the results from the point of view of diagnosis and as an aid to treatment is not explained according to the latest researches. Doubtless this defect will be remedied in a future edition.

The book contains a large number of excellent illustrations, the coloured plates being particularly good. We can cordially recommend the work to those of our readers who desire a trustworthy text-book on clinical diagnosis.

Common Disorders and Diseases of Childhood. By George Frederick Still, M.A., M.D. Cantab., F.R.C.P. Lond., Professor of Diseases of Children, King's College, London, &c. London: Henry Frowde and Hodder and Stoughton. 1909. Pp. 731. Price 15*s.* net.

In the preface to this volume the author modestly tells us that it has no claim to vie with the many text-books which deal with the whole subject of disease in childhood, and is not intended as a systematic work. Nevertheless, we are inclined to think that those who are interested in this subject will find it in many respects more valuable than an ordinary text-book. It is devoted to just those affections which are likely to be encountered in practice and treats of them in a practical way. The material is mainly drawn from Dr. Still's own large experience, and is therefore particularly valuable as being first-hand information, not a mere *réchauffé* of the statements of others, as text-books too often are. The subjects dealt with are too numerous to mention in detail. The first six chapters are devoted to the different aspects of infant feeding, and the seventh and eighth to the allied field of rickets and scurvy. A chapter on hypertrophy of the pylorus in infants might seem to be a little outside the scope of the work, as it can hardly be called a common condition; it is, however, of considerable importance. Digestive disorders of various kinds form the subject of Chapters IX. to XVII., followed by a discussion of the fever of obscure origin which is so often met with in children and which has in many cases a gastro-intestinal origin. The three next chapters deal with intestinal worms, with jaundice in children, and with the different affections called by different observers "croup." Diseases of the respiratory organs (bronchitis, broncho-pneumonia, pneumonia proper, and empyema) occupy the next four chapters, followed by three on the different forms of tuberculosis. Dr. Still believes that tuberculous infection is usually brought about by inhalation in children in whom the respiratory tract is specially vulnerable. To rheumatism and its allies, chorea and heart disease, four chapters are devoted, and two to nephritis and urinary disorders. The next 13 chapters are taken up with nervous disorders of all kinds, functional and organic, mental and bodily. On all of these Dr. Still's authority is well recognised. The concluding chapter is on congenital syphilis. Why it is placed here is not quite apparent, but it is none the less interesting for its postponement.

We cordially commend the book to all practitioners, and cannot praise it more highly than by saying that it is all that we should expect from its accomplished writer.

LIBRARY TABLE.

Diseases of the Digestive Canal (Œsophagus, Stomach, Intestines). By Dr. Paul Cohnheim, Specialist in Diseases of the Stomach and Intestines in Berlin. From the second German edition. Edited and translated by Dudley Fulton, M.D., Lecturer on Medicine, University of Southern California, Los Angeles. Illustrated. London and Philadelphia: J. B. Lippincott Company. 1909. Pp. 373. Price 16*s.* net.—Dr. Cohnheim's little book on diseases of the digestive system well deserved translation into English, being simply and practically written and showing signs of original investigation and personal experience. The translation is on the whole well done. The illustrations have been altered so as to show an earnest young American practitioner palpating a patient in place of the German physician of the original diagrams, and some new pictures have been added without, so far as we can see, adding much to the value of the work. We prefer the *format* of the German edition to that of the English one, as the former is lighter and thinner, with rather larger pages. The price of the translation is also, we believe, considerably higher than that of the original. Those, therefore, who are conversant with the German language will probably prefer the original, while those who are not so will be grateful for the translation.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S. Eng., F.Z.S. With illustrations by Lilian M. Medland. In 20 Parts. London: E. Grant Richards. 1909. Price 7*s.* 6*d.* each part.—Six parts of this interesting serial publication have appeared since our last review, and the standard of excellence both in text and illustration to which we have made previous reference is maintained. The author and the artist continue to work hand in hand to turn out a really authoritative text-book upon British birds. We are selecting for particular notice Volumes XIII. and XIV., the first of which contains the Columbæ and the Gallinæ, nearly all of which birds are so large that their pictures have to undergo a certain amount of compression to go neatly into the page. It is an undoubted drawback to these admirable pictorial representations that they have to be drawn occasionally out of scale, and now and again—as, for example, in the picture of the turtle-dove—we feel that the elegance of the page might well have been sacrificed to give us a life-size representation of the bird, which could, as a matter of fact, have been easily delineated on an available surface of nearly a foot square. The eye, at any rate at first, may fail to accommodate itself to the reduction which the artist has been compelled to suffer, and this will be recognised if we look at the representation of birds familiar in appearance to all of us, whether naturalists or not. The portraits of the pheasant, the partridge, and the grouse have all been reduced, and we have an instinctive feeling that the picture of the quail, which is drawn life-size, is more like its subject.

Mr. Stonham's notes are, as usual, replete with information, and the life-history of some of the birds described is very interesting. We wonder if it is common knowledge that the capercaillie of to-day is an alien bird introduced some 30 or 40 years ago from Sweden when the destruction of the pine forests had led to the extinction of the indigenous breed in the north of England and Scotland. The capercaillie, by the way, is an incontinent bird whose willingness to hybridise with the blackcock and the pheasant might well, we think, be taken advantage of in carrying out experiments in Mendelism, but possibly this has already occurred to practical workers. In the story of Pallas's sand-grouse no explanation is offered of the curious fact that the bird periodically invades us but cannot be proved to breed with us, while it is an interesting question for surmise whether the alteration in agricultural conditions in England will lead to the return among us of the birds which ceased to breed under the conditions prevalent in the palmy days of farming. Afforestation and the increase of pasture might, we suppose, lead to the recovery for our landscapes of many birds which are now no longer seen within our shores, or seen only as rare visitors, but the re-establishment, to take effect, will have to be in some numbers, for any stray sojourner is almost invariably shot by the first idiot who can hit it. Volume XIV. contains the orders Fulicariæ, under which we find crakes, rails, and coots, and in this volume there are mentioned two beautiful birds which, alas, are no longer to be counted with us—the crane and the great bustard. Cranes, we learn, were fairly common in England up to the sixteenth century, but there is no reference to them in Shakespeare, that learned field naturalist, and some of the allusions in literature are possibly due to confusion with herons. Cranes, we hear from Mr. Stonham, were protected by Act of Parliament at one time, and possibly the Act has never been repealed, but it is long since they have bred in this country. As a rare and occasional visitor the crane is asked to display great self-sacrifice, for the last record of its appearance, on May 23rd, 1908, has the additional note that the bird, a female, was shot and is now preserved in the Grosvenor Museum. A colony of great bustards, for so long the glory of Norfolk, was put down recently very near the spot where the last native pair were killed—namely, on the high heathland near Watton and Swaffham in Norfolk, by Lord Walsingham, whose efforts, however, to preserve the birds proved ineffective.

England is still the country of birds, and we should like to think that our superiority will be maintained, but it is a question whether we deserve it, for the general ignorance of birds and bird-life is great.

The Practice of Medicine. By the late M. CHARTERIS, M.D. Edin., Professor of Materia Medica and Therapeutics, Glasgow University, &c. Ninth edition. Edited by F. J. CHARTERIS, M.D. Glasg., Physician to Out-door Department, Western Infirmary, Glasgow, &c. London: J. and A. Churchill. 1909. Pp. 689. Price 9*s*. 6*d*. net.—A text-book which has attained its ninth edition should be fairly beyond the scope of criticism, and we need only say that, so far as we have been able to judge, the present edition is adequately brought up to date. The editor has been assisted by Dr. A. Grey Banks in the articles on the infectious fevers, but is alone responsible for the rest of the work, which has included much rewriting as well as revision. The book is practically a short text-book of medicine, suitable for students entering for the easier examinations. In many places its brevity makes it scarcely adequate for use without some supplemental reading. It is furnished with an appendix of therapeutical information, prescriptions, posological tables, incompatibles, &c.; also with a glossary of medical terms.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXVIII., No. 5. London: C. F. Clay, Cambridge University Press Warehouse. June 15th, 1909. Price 5*s*. 6*d*.—The contents of this number are: 1. On the Nature of the Fat Contained in the Liver, Kidney, and Heart, Part II., by Percival Hartley, Grocers' Company Research Scholar. Mr. Hartley demonstrated in a prior communication that the fats occurring in the liver, kidney, and heart yield on saponification a mixture of higher fatty acids which is far more complex than the mixture obtained by saponification of the connective-tissue fat. The fatty acids from the former sources have a very high iodine value, and when exposed to the air or when heated undergo changes whereby the iodine value diminishes, and at the same time a portion of the fatty acids is converted into a resinous substance which is insoluble in petroleum ether. In the present communication these fats are further investigated. In the fat of the liver linoleic acid and an acid having the formula $C_{20}H_{32}O_2$ are found. 2. A Mammalian Spinal Preparation, by C. S. Sherrington, University of Liverpool. In the production of this preparation the animal (cat) is deeply anæsthetised, the skin incised and reflected at the level of the axis after the insertion of a cannula into the trachea. A deep incision is made through the musculature behind the atlas, and a strong ligature is passed under the body of the atlas so as to compress the vertebral arteries. A second ligature surrounds the whole of the neck except the trachea, and decapitation is then performed. Hæmorrhage is slight. Artificial respiration is maintained. The skin flaps are brought together with the view of covering the exposed surface of the divided cord. The whole operation occupies about six minutes. The cord is found to be divided a little below the point of the calamus scriptorius. The preparation is well adapted for investigating muscular reflexes, which may be observed for ten hours. 3. A Stable Derivative of Hæmochromogen, by J. A. Milroy, M.A., M.D. Edin., from the Physiological Laboratory, Queen's University, Belfast. In this preparation nickel appears to replace iron. 4. The Carbon Monoxide Capacity of Reduced Acid Hæmatin, by J. A. Milroy, M.A., M.D. Edin., Belfast. 5. The Causes of Periodic or Cheyne-Stokes Breathing, by C. Gordon Douglas, B.M. Oxon., and J. S. Haldane, M.D. Edin., F.R.S., a note upon which paper occurs in another column. 6. The Regulation of Normal Breathing, by C. G. Douglas, B.M., and J. S. Haldane, M.D. Edin., F.R.S. This number also contains the Proceedings of the Physiological Society for March 27th, 1909.

Le Laryngoscope. Paris: Maloine. Price 75 centimes. —The July number contains an original article by Dr. Texier and Dr. Molinié of Nantes on Foreign Bodies in the Larynges of Children, with a great many illustrative cases. This article, which is very interesting and complete, is followed by one on Aneurysms of the Ascending Aorta and the Transverse Aorta, with the complete Mediastinal Syndrome of Symptoms, by Professor Boinet, and an interesting little paper on the Treatment of Certain Rebellious Nasal Synechiæ, by Dr. Jacques and Dr. Mathieu. It is a very well got up little journal, and this number fully justifies the favourable impression which we formed of its predecessors.

Verhandlungen des Vereins Deutschen Laryngologen. (*Proceedings of the German Laryngological Society.*) Würzburg: Stube. 1908. Price 2 marks 50 pfening.—At this meeting nine papers were read, the subjects and authors being as follows: Carcinoma of the Hypopharynx, by Dr. Körner; the Employment of Fulguration in Laryngology, by Dr. von Eichhorn; Diseases of the Sphenoidal Sinus in association with Scarlet Fever, by Dr. Killian; a paper on Experiences in Regard to Complications of Disease of the Sphenoidal Sinus, and a paper on the Flow of Saliva through the Nose, by Dr. von Eichen; a paper on Light Therapy in Acute Sphenoidal Sinus Disease, and a paper on a Contribution to Submucous Resection, by Dr. Brünings; a case of Primary Tuberculosis of the Palate, by Dr. Goris; and a case of Primary Syphilitic Infection of the Septum Nasi, by Dr. Neugas.

New Inventions.

INSTRUMENTS FOR GASTRO-ENTEROSTOMY AND CHOLECYSTOSTOMY.

DURING the performance of gastro-enterostomy or intestinal anastomosis it frequently happens that the pouting mucous membrane of the already sutured half of the bowel is apt to be in the way of the needle while the anterior or return half of the mucous membrane is being sutured. To aid in the application of this suture I have had a protector made with ends of different sizes for gastric or intestinal work (Fig. 1). It is applied after the posterior suture line is complete and serves to depress the ridge of mucous membrane, at the same time affording a smooth surface over which the point of the needle readily glides. It is easily withdrawn before the suture is completed. A three-bladed coaptation forceps (Fig. 2) (originally designed for the coaptation of skin edges) has also proved useful for lifting up in apposition the edges to be sewn. The gall-stone bowl (Fig. 3) is of assistance in the cleanly performance of cholecystostomy. The apex of the gall-bladder, after having been drawn through a hole in the centre of a sheet of thin rubber, is seized with two pairs of Porrier's forceps which are allowed to hang over the projections on either side of the lip of the bowl, the gall-bladder is opened between them, and its contents readily scooped into the bowl which rests upon the lower part of the abdominal incision. The above instruments have been made for me by Messrs. Down Bros.

FIG. 1.

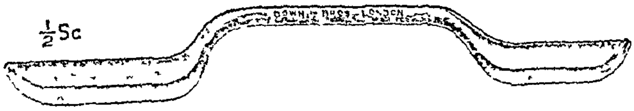


FIG. 2.

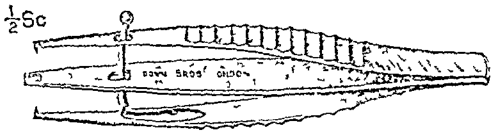
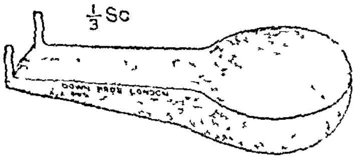


FIG. 3.



HAROLD UPCOTT, F.R.C.S. Eng.,
Hull. Honorary Assistant Surgeon, Hull Royal Infirmary.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office, 37, Soho-square, W., on June 25th, under the presidency of Sir HENRY MORRIS, Bart., the treasurer of the College. He was supported by Sir R. Douglas Powell, Bart., Sir Constantine Holman, Mr. J. Paul Bush, C.M.G., Dr. Charles Caldecott, Dr. Charles W. Chapman, Dr. William Collier, Dr. Clement Godson, Dr. F. de Havilland Hall, Mr. H. E. H. Matthews, Mr. John H. Morgan, C.V.O., Rev. E. W. Northey, Dr. Guthrie Rankin, Mr. Clement Locke Smiles, Dr. Frederick Taylor, Mr. W. Bramley Taylor, Dr. J. Roberts Thomson, and Dr. W. Essex Wynter.

The proceedings commenced with the passing of a resolution expressing the cordial congratulations of the meeting on the well-deserved honour of a baronetcy conferred upon Sir Henry Morris by His Majesty the King. This was moved by Sir CONSTANTINE HOLMAN, the late treasurer of the College, seconded by Sir R. DOUGLAS POWELL, and carried by acclamation.

The SECRETARY having read the result of the voting for pensionerships and foundation scholarships, which have already been published in the columns of THE LANCET, the resolution as to the adoption of the report for the past year was moved by the Chairman, who referred to the salient points contained therein, and was carried unanimously. The report stated that although the receipts from subscriptions and donations were slightly lower than in the previous year there was a surplus on the ordinary income and expenditure account of £432 14s. 7d. A sum of £5498 11s. 9d. was spent on extending the buildings at Epsom in 1908, of which amount £883 was the balance of the cost of the new lavatory block, and £4614 the expenditure (on account) of the new Markham Skerritt laboratories. In the report for the year 1897 the governors were informed that under the will of the late Dr. Henry Fearnside, of Bournemouth, the residue of his estate would pass to the College for the Endowment Fund after the decease of his widow. Owing to Mrs. Fearnside's death in 1908 the residue would shortly be handed over to the Endowment Fund. The council hoped that friends of the institution would do their best to secure fresh annual subscribers, since death removes annually many who had been staunch supporters of the College from soon after its foundation. If members of the profession who are unable to contribute large amounts would subscribe a guinea, or even half-a-guinea, annually; and if all medical men would plead the cause of the foundation to their well-to-do relatives and friends the present number of 50 pensioners and 50 foundation scholars could be maintained without difficulty. As the total assured income of the College, including the dividends from the Fearnside legacy fund but deducting interest on mortgages, is under £2500 a year, whilst the maintenance of the 50 pensionerships and 50 foundation scholarships requires close upon £7000 annually, a sum of £4500 a year must be obtained from voluntary contributions. In an appeal recently issued by the honorary treasurer attention was drawn to the fact that whilst the names of 39,827 persons are contained in the Medical Register, under 2200 medical practitioners—that is to say, only one-eighteenth of the profession—are annual subscribers to the foundation. Under the will of the late Miss Annie Graham Sewell, one-fifth of the residue of her estate has been left to the College for the purpose of creating pensionerships under the following conditions: "Pensions shall be provided of not less than £20, nor more than £50, each; such pensions shall be called or known as the 'Brodie Sewell Pensions,' and shall be allocated or granted to the objects of the institution or charity, but in selecting pensioners for 'Brodie Sewell Pensions' preference shall always be given to the widows and spinster daughters of medical practitioners." In accordance with the will of the testatrix, the first presentations to these pensionerships will be made by her executors.

The report further pointed out that the new building to provide further class-rooms, better accommodation for teaching science, and a room for the use of the day boys, was opened in March last. The laboratories, which are to be called permanently the "Markham Skerritt Laboratories," have been well equipped, and will afford efficient means of instruction in physics and biology to all boys who require these subjects. After giving careful consideration to a scheme for the provision of further buildings which are urgently needed in view of the rapid growth of the school, the council decided to erect a new gymnasium, new music rooms, and a new workshop, and to provide a central heating plant having sufficient power to heat all the new buildings, together with Granville House, the large school, and the chemical laboratory. These extensions and improvements will probably cost over £6000, but though this sum is large the council feels assured that a consistent and definite scheme of extension is the most economical course that can be followed. That the school is growing in importance and popularity may be seen from the fact that there are 282 boys at present in the College, whereas in the same term five years ago there were only 235 boys. Old Epsomians have raised a subscription for the purpose of erecting a stained-glass window in the College chapel as a memorial to the late Archdeacon Thornton, who was the first headmaster of the College.

The report concluded with the honours of the year, which are as follows:—H. A. Baylis has won an open classical exhibition at Jesus College, Oxford; J. M. L. Bogle an open studentship at the University of Liverpool; G. K. Bowes a junior studentship for science at Christ Church, Oxford; and C. A. Mallam a classical exhibition at Keble College, Oxford. Ten boys have passed the whole or a part of the preliminary scientific examination for the degree of M.B., B.S. of the University of London, 18 have passed the matriculation examination of the same University, 11 have gained the higher certificate of the Oxford and Cambridge Schools Examination Board, and 18 have gained the lower certificate.

The retiring members of the council and the auditors were then reappointed; Dr. de Havilland Hall was elected a vice-president of the College; and various alterations and additions were made to the by-laws of the College.

The meeting closed with a vote of thanks to the chairman.

THE LANCET.

LONDON: SATURDAY, JULY 3, 1909.

Public Health and Social Conditions.

THE President of the Local Government Board has recently issued in a Blue-book[1] of more than one hundred folio pages a collection of statistical memoranda relating to public health and social conditions, presumably for the instruction of the large body of local officers who depend on the Board for authority and guidance in the discharge of their various duties. The graphic representation of statistics is, we believe, a favourite device with Mr. JOHN BURNS, who believes, like ourselves, that such appeals to the eye are particularly arresting and convincing, and we are glad that he has thought proper to summarise in one volume practically all available statistics relating to the work of his important office, and to illustrate them as completely as possible by charts and diagrams, which, although by no means new, are inserted on the authority of the several State departments concerned. The issue of a statistical summary on the present lines constitutes an entirely new departure on the part of the central authority, and we shall be interested to learn how far its authoritative publication is appreciated by the public officials for whose edification it has apparently been designed. The compilation has been entrusted to Mr. C. F. A. HORE of the Local Government Board, and the sections relating to the public health and to pauperism have been produced under the direction of Dr. A. NEWSHOLME and Mr. J. S. DAVY respectively. From an introductory note we learn that the volume is designed to illustrate in a convenient and readily intelligible form the following conditions: (1) the growth of population and the changes in the occupations of the people; (2) the principal facts respecting public health and mortality, together with an account of sanitary administration, central as well as local; (3) the material features of industrial conditions—e.g., the changes of occupation, the rise of wages and the decline in prices of the necessaries of life, the fluctuations in the labour market, and the results of measures for dealing with unemployment; and (4) the subject of Poor-law relief, the decline of pauperism, and its cost in the present as compared with the past. Other sections in the volume deal with the subjects of taxation and the growth of local expenditure for sanitary and other purposes. While each topic is dealt with as succinctly as possible, the endeavour has been made to provide materials for a historical survey of the subject, many of the tables and charts having been carried back over a period of more than a half century. The compilers confess that their work contains little that can claim the merit of originality. Much of the material is derived from reports issued from time to time by Government departments, although not previously available in connected form. To effect such connexion, whilst at the same time restricting the work within reasonable limits, a few only of the most important topics, and those chiefly relating to administrative matters especially bearing upon the work of the recent Poor-law Commission, have been selected for comment.

In the present article our observations will relate almost exclusively to the first two of the sections into which, as we have said, the work is divided, inasmuch as they contain data which are of chief interest to our medical readers. In the first section the principal facts are summarised concerning the growth and distribution of the population of these islands. The actual figures, having been already published in the census reports of the Registrar-General, are omitted here. But it is worthy of remark, as showing the rapid growth of the British population, that within the half-century ended in 1901 the number of persons living showed an increase of more than 50 per cent. It has frequently been stated that the period of maximum increase of the population corresponds to the period of maximum birth-rate, which was in 1871–81. This decade includes the years 1871–75, when, as shown by the decline of unemployment and pauperism, and by the rise in the average rate of wages, the country enjoyed a marked increase of prosperity. In the intercensal period 1881–91 there was a fall in the relative increase of the population, but the more recent decade again shows a recovery. The factors which determine the growth of population are (*a*) the balance between emigration and immigration, and (*b*) the difference between the births and the deaths. It is impossible to determine the extent to which the community gains by immigration, because the returns include foreigners only temporarily resident in this country, while the offspring of aliens born since their arrival here are excluded. It should be noted, however, that ever since the establishment of civil registration the number of births has invariably exceeded the number of deaths, and that the ratio of births to population has for the last three decades been declining. The ratio of deaths has also shown a decrease, although this decrease does not quite balance the fall in the birth-rate. The net result is that the average natural increase of the population—i.e., the balance between natality and mortality—has slightly declined within the last 30 years. In the second section of the work the general subject of public health is dealt with by Dr. NEWSHOLME, who ably discusses, in the first place, the evidence as to the health of the community afforded by the recorded mortality, especially that of infants, the death-rates from the principal diseases, and the mortality in the various industries. Secondly, he considers the development of public health administration, particularly in regard to the measures for general sanitation, for the improvement of unhealthy and overcrowded areas, and for rehousing the displaced inhabitants; and finally, the condition of the public medical service under central and local control. It is matter of common knowledge that recently the general health of the people of this country has very considerably improved; indeed, it would be surprising if it were otherwise, having regard to the enormous sums annually expended in safeguarding the public health. A similar, but hardly equal, improvement has taken place in the health of most other European nations. The Registrar-General has for some years past published returns of mortality for the principal colonial and foreign States, setting forth not only the crude death-rate from all causes in terms of the estimated population at all ages, but, what is more important from a sanitary standpoint, the loss of life due to the more prevalent diseases. Although these returns are interesting and valuable as records of fact, they nevertheless lack that precision which should attach to such records wherever they are regarded as criteria of the degree of health or of longevity of communities placed in comparison. Unfortunately, the colonial and foreign returns published by the Registrar-General of England are not corrected for differences of age and sex constitution of the several populations, and therefore, strictly speaking, they are to that extent untrustworthy. In England and Wales, however, careful correction for this disturbing factor has for many years been made at Somerset House, so that the mortality of the principal cities and other urban areas becomes fairly comparable with that of the rural districts. The latest Blue-book tells us that after correction of this kind there is an average difference of 23 per cent. in the mortality of the urban and rural areas. The greater mortality in urban areas is attributable, among many causes, to the more serious risk of life incidental to certain industrial occupations, to the greater liability to infection and other risks attending the undue aggregation of population, and to the general lowering of health attaching to the insanitary surroundings of populous places. We know that such conditions are remediable by well-directed public action, and it is only just to acknowledge that the recent satisfactory decline in British mortality, especially in that of the more prevalent diseases, is in a large measure due to the sanitary progress of recent years.

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[1] Statistical Memoranda and Charts prepared in the Local Government Board relating to Public Health and Social Conditions. Eyre and Spottiswoode, Limited. 5s. 1909.

The elaborate statistics that accompany this volume furnish striking evidence of the improved condition of public health in this country. The average duration of life has been prolonged, the death-rate has fallen to an unprecedentedly low figure, and diseases such as pulmonary tuberculosis, enteric fever, and small-pox have become far less prevalent. Having regard to his position as medical adviser of the Board, we are prepared to find that Dr. Newsholme has devoted a large portion of his memorandum to a review of public health administration in England and Wales. The story of that administration is one of steady progress. As a result of the great outbreak of cholera which visited this country in 1831 a Royal Commission was appointed, shortly after which year—viz., in 1847—the Towns Improvement Clauses Act was passed, and in the following year the first Public Health Act. Under that enactment a general Board of Health was established, with power to sanction the constitution of local boards of health on petition of the inhabitants concerned. But it was not until 1871 that the organisation of public health authorities was recast and placed on a fairly satisfactory footing. Under the Act of that year the Local Government Board was made the Central Public Health Authority, and was invested with the powers previously possessed by the Privy Council and the Home Office in relation to sanitary authorities. The whole of England and Wales was under that Act divided into urban and rural sanitary districts, but the powers scattered through several Acts were not consolidated into an effective measure until 1875, in which year the Magna Charta of public health obtained a place on the Statute Book, and this still remains the chief instrument for the promotion of public health in all parts of England outside the metropolis. The publication of this latest Blue-book shows in a graphic manner our present position with regard to public health, and proves that Mr. Burns and his medical adviser are alert to ensure that the steady rate of progress shall be maintained.

A Standard Diet.

From time to time our most cherished beliefs receive rude shocks as the advance of knowledge brings to light new and unexpected truths, and it may happen that views which seemed most firmly rooted are exhibited in the guise of mere fragile hypotheses. Not many years ago the average dietetic needs of mankind seemed to have been securely ascertained for all time by the researches of Voit and others, which formed the basis of definite dogmatic assertions set out in all text-books of physiology. In recent years, however, doubt has been thrown on the correctness of these observations, chiefly by the researches of Chittenden, on the scientific side, and among the popular world similar doubts have been raised as to the wisdom of ordinary methods of feeding by the energetic preaching of that enthusiast, Mr. Horace Fletcher, who holds that most of the ills of life may be avoided by prolonged mastication of our food. According to this theory of life a little food is made not only to last a long time but also to go a long way, a very small quantity of fuel being apparently needed by a machine which is stoked in this peculiar manner. Since modern society is not unlike that of ancient Athens in its desire for some new thing, and as health and hygiene are fields in which the follies of persons with a tendency to mental obliquity may be actually dangerous, it is well that the credentials of the new doctrines should be carefully scrutinised. This task has been recently undertaken by Sir James Crichton-Browne, whose presidential address to the Section of Preventive Medicine at the meeting of the Royal Institute of Public Health in 1908 has now been issued in book form[1] and thus rendered attainable by the world at large. In the course of it he brings forward a large amount of information as to the practical experience which has been gained in different parts of the world and in different circumstances with regard to the minimum quantity of food needed by the human animal for the proper maintenance of its strength and activity. The data furnished are far from supporting the new doctrines, and are indeed very difficult to reconcile therewith.

Exact measurements of dietetic requirements are most easily made in the field of protein metabolism, and it is to this that Sir James Crichton-Browne's inquiry is mainly directed. The standard laid down by Voit demanded 118 grammes of protein food for an average man doing ordinary work, *and more recently* ATWATER *slightly raised this* amount, calculating the proper protein ration as 125 grammes. CHITTENDEN, on the other hand, holds as the result of his observations that 60 grammes is adequate for a man of average weight. The ordinary diet of the Japanese is quoted in support of this calculation, as OSHIMA puts their daily intake of protein at just this figure; but Sir JAMES CRICHTON-BROWNE rightly points out that the argument is inconclusive, since the Japanese are a small race and therefore need a quantity of food proportionately less than the European. He even suggests that this smallness of stature may be due to defective supply of food. It is usual to credit the European races with more energy and endurance than the Asiatic, and these qualities are sometimes attributed to the greater protein intake of the former. The vigour and endurance displayed by the Japanese have, however, tended to throw doubt both on the fact and on its explanation, so that a proper understanding of the dietetic habits of this remarkable people is most desirable. It is interesting to note that in the Japanese army during the recent campaign in Manchuria the protein ration supplied was more abundant than had fallen to the lot of any army in the field in previous times. Returning to European experiences, we find that attempts have from time to time been made to cut down the diet of prisoners in gaol to the lowest limit compatible with existence, and thus experiments have been made which afford interesting light on the problem of diet. Some time ago in England ordinary prisoners were kept on a diet containing only 57 grammes of protein, and credible testimony shows that this resulted in a state of semi-starvation; while for convicts on what is termed light labour even 130 grammes proved insufficient. In France a ration containing 94 grammes of protein was found by GAUTIER to be too poor in meat. These observations actually made on a considerable number of subjects are very difficult to reconcile with the views of CHITTENDEN as to the proper protein ration. It must, of course, always be borne in mind that in dealing with proteins we are dealing only with a portion of the whole field of diet, and that probably a larger allowance of carbohydrates and fats may for a time compensate for slight defects of protein constituents in the food. Nevertheless, a certain amount of proteins must be supplied in some form or other, and there is an irreducible minimum below which continuous loss of substance must occur. As to the proper average amount experience tends to support the ordinary dietetic usages of mankind.

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[1] *Parcimony in Nutrition.* By Sir James Crichton-Browne, M.D., LL.D., F.R.S., Lord Chancellor's Visitor in Lunacy, London. London and New York; Funk and Wagnalls Co. 1909. Pp. 111. Price 3s.

It is sometimes said that in such a matter as diet rules are unnecessary and that we may safely be guided by appetite alone, the truest indicator of the need for food. A little reflection will raise doubts as to the feasibility of relying on this measure of what is requisite. To the consciousness of the individual it is difficult or impossible to distinguish between the desire for food arising from true hunger and that produced by the sight of food which is attractive to the palate; in other words, to distinguish between need and greed. To the ascetic living on the plainest fare this problem might not present the same difficulty, but it is unlikely that asceticism will largely replace the luxurious habits of modern civilisation. Even on monastic fare difficulties might arise, *for appetite is stayed by mere bulk of material ingested*, at least for a time. Thus a meal of rice is temporarily most satisfying, but as digestion proceeds the lack of sustenance contained in the food in proportion to its bulk becomes, to the European at all events, unpleasantly obvious. If, then, individual consciousness is a fallible guide, it is difficult to place much reliance on popular habits as a criterion of what is necessary. When, however, the habits coincide fairly closely with the results of experiment they may be provisionally accepted, and popular usage certainly demands a protein ration far above CHITTENDEN'S figures. On the whole, we do not think it would be wise for healthy individuals to make any sudden alteration in their habits of life in the direction of adopting a strict Chittenden diet. There is some evidence, derived from experiments on animals, to show that such a proceeding leads to a diminution in the resistance of the body to infective diseases. Nevertheless, it is undoubted that the well-to-do classes at all events—and we may include in this class not only the nominally rich but all those who have the means to live without oppressive forethought for the morrow—have a tendency to indulge excessively in food, especially in that of an animal nature. Good may therefore ensue if the views recently propounded result in some curtailment of the consumption of meat, which has increased so markedly in recent years. To those who have reached or passed middle life such self-restraint is specially advisable, above all if they are compelled to lead somewhat sedentary lives. To such, a reduction of the protein ration of youth, and moderation *in consumption even* of the other forms of food, may be safely commended. As the fire of life burns less fiercely and the output of energy is smaller, so the fuel supplied should be reduced, that the system may not be clogged with ashes and half-burnt cinders whereby the activity of the whole machine is from time to time impaired and may even be prematurely arrested.

Enteric Fever due to Shell-fish.

THE problem of tracking an outbreak of infective disease to its origin often presents difficulties of no mean magnitude and necessitates in the tracker qualities which are popularly associated rather with criminal investigations than with medical and sanitary studies. We are inclined to attribute the faculties of accurate observation and close deductive reasoning necessary for such inquiries to Mr. SHERLOCK HOLMES rather than to his medical friend, Dr. WATSON. This is wrong, and we have often felt that the novelist did an injustice to the medical profession, his own profession, moreover, when he used a member of it as a foil to his hero, for our sanitarians need have no fear of challenging comparison with legal or criminal investigators. A conspicuous example of such reasoning applied to the problems of public health is afforded in the noteworthy paper recently read by Dr. L. W. DARRA MAIR before the Epidemiological Section of the Royal Society of Medicine on the subject of the prevalence of enteric fever in Belfast and of its mode of causation. For many years this city held an *undesirable* pre-eminence in respect to its death-rate from enteric fever, the rate of mortality per 1000 persons living being in the decade 1891–1900 0·86, as compared with an average of about 0·32 among 19 other large towns, while in the following decennium the Belfast figure was 0·57, as against 0·19 in the other towns. The need for special inquiry into the cause of such prevalence was therefore clear. The two methods of the spread of enteric fever which are most widely recognised are by means of water and by defective disposal of sewage. These were therefore first investigated by Dr. Mair and found insufficient to account for the phenomena of spread in Belfast. It was obvious that the distribution of the cases did not correspond at all accurately with the areas supplied from any one of the water intakes, and the onset of the outbreaks had not that sudden "explosive" character which is associated with those due to contaminated water. On the other hand, there were factors which were quite consonant with the possible influence of defective sanitary arrangements on the prevalence of the disease, as a considerable section of the city was in the earlier part of the period of time covered by the investigation badly furnished with sewers and largely dependent on a system of privy-middens. Nevertheless, this hypothesis had also to be discarded, as it was found that improvement in sewerage had not been followed by any decline in the prevalence of the fever; indeed, there had actually been an increase in the latter corresponding with the provision of a scheme of drainage by which the sewage of the town was carried out into Belfast Lough. Apart from this peculiar phenomenon the only outstanding fact bearing on the problem was that the areas of maximum infection corresponded pretty accurately with those parts of the city which were mainly inhabited by the labouring classes.

These two hypotheses being thus rejected, there remained that of the spread of enteric fever by means of infected shell-fish. This mode of causation has often been traced in isolated outbreaks, but, so far as we are aware, it has not hitherto been found answerable for continued epidemic prevalence of enteric fever in particular localities. Nevertheless, in the present instance this mode of explanation was found to correspond closely with the observed features of the disease. There was in the first place plenty of opportunity for such infection, as cockles taken from the shore of the Lough were largely consumed in the town, being not only hawked about the streets by local vendors, but also collected by many of the inhabitants themselves, and eaten for the most part raw. A decline in the incidence of enteric fever occurred in the early "eighties" coincidently with the reclamation of a large portion of the foreshore from which the shell-fish were taken, while the introduction of the new scheme of sewerage seemed actually to inaugurate a rise in the number of attacks, doubtless owing to the carriage to the sea of a larger portion of the whole sewage of the town, and the consequent greater infection of the cockles lying on the shore. Special facilities for this pollution of the shore waters were traceable, not only to the sluggishness of the tides at this point which thus failed to carry off the offending material, but also to a breakdown of the actual sewer, which leaked over a considerable portion of the foreshore. The conditions thus resulted in a discharge of crude sewage, amounting to 12 or 15 millions of gallons daily, into "shallow and sluggish water in the immediate vicinity of shell-fish beds daily drawn upon for public consumption." Several minor features tended to confirm this view of the causation of the epidemic. Thus it was noted that the Jewish population—not a large one indeed in this locality—was singularly free from the scourge, and this fact was readily explicable in view of their abstinence from shell-fish as an article of food; whereas in outbreaks elsewhere, in which the disease had been associated with the distribution of infected milk, they had not shown any racial immunity. Further, the inhabitants of public institutions, such as the hospitals, the workhouse, and the prison, who would naturally have no opportunities of obtaining shell-fish for consumption, were on the whole free from enteric fever. Finally, certain peculiarities in the seasonal incidence of the disease in Belfast admitted of explanation on this hypothesis. It was found that the smallest number of cases occurred here in the winter months, December to February, while the incidence rose in the spring and was highest in August and September, whereas in London and in Manchester, which are compared in Dr. Mair's paper, the spring months show no such rise, being, indeed, specially free from enteric fever, while the morbidity is in September and in October. Now it is true that in Belfast there are no special seasons for the consumption of shell-fish, but the indulgence in certain of these delicacies is confessedly greatest in the spring and summer, since the pleasant weather tempts many persons to frequent the shore and gather the cockles.

There can be little doubt that in any epidemic of enteric fever other causes take part in spreading the epidemic besides the original source of infection. Thus, as Dr. A. Newsholme pointed out in the discussion which followed Dr. Mair's paper, the existence of privy-middens may readily lead to extension of an epidemic which is once established, while the presence of a certain proportion of "typhoid-carriers" among those classes of the population who are engaged in the preparation of food constitutes another source of danger. Nevertheless, it was generally admitted by the section of the Royal Society of Medicine, and we think on excellent grounds, that Dr. Mair had thoroughly established his position with regard to the Belfast epidemic. The whole paper constituted a most valuable contribution to the study of this source of enteric fever, and will doubtless lead to stricter control being exercised by public health authorities all over the country with regard to the conditions which prevail as to the collection, storage, and sale of such dangerous articles of diet as cockles and mussels.

The Congress on Alcoholism.—The International Congress on Alcoholism will meet in London at the Imperial Institute on July 19th and following days. The Duke of Connaught will preside, and the list of vice-presidents contains many influential names. Various Governments in both hemispheres have appointed official representatives, those for France being M. Riémain and M. G. Barbey, while those of the United States of America include, among others, Surgeon F. L. Pleadwell of the U.S. Navy, and Dr. T. D. Crothers of Hartford, Connecticut.

Annotations.

"Ne quid nimis."

DARWIN, EVOLUTION, AND PATHOLOGY.

THE recent celebrations at Cambridge of the centenary of the birth of Charles Darwin and of the fiftieth anniversary of the publication of the "Origin of Species" were remarkable not only for the wide area from which those taking part in the celebration were drawn, but also, and even more, for the unanimity with which the importance of Darwin's teaching was appreciated. The meeting at Cambridge emphasised the fact that the few who seem to claim that Darwinism has been superseded are either themselves misunderstood or are not fully acquainted with what Darwin really taught. Those who know his teaching best are best able to appreciate how widely his ideas have penetrated into every science and how adaptable in many directions those ideas were and are, so that it is extremely difficult to say of any work done since his era that it is directly antagonistic to his theories. The central and general idea of evolution is very old, but until Darwin arose, no simple or reasonable explanation had been given of the method by which this evolution might be brought about. Many had recognised the apparently progressive change in organic forms, so that there was an almost continuous slope from the lowest forms to the highest, but it was hardly definitely recognised that all these organisms might be parts of a true genealogical tree. Darwin was perfectly original in pointing out that while change in organic forms depended on the variations and peculiarities present in every organism, the persistence of these changes was dependent upon their power of agreement with the conditions in which the organisms were placed. The question whether the variations are great and immediate or slow and little is on another plane; the main doctrine depends on the survival of those forms which are best adapted to the circumstances in which they find themselves. The evolution of plants and animals is now universally admitted, but it is not sufficiently perceived that the doctrine of evolution is applicable to many other sciences than biology. Recent researches have indicated that in matter itself there has been an evolution of elements with the ultimate survival of those which could endure the conditions of their environment. It is, however, in the realm of pathology that the importance of evolution is of the greatest interest to us. In the never-ending struggle between an animal and the parasitic micro-organisms invading it, forms are slowly evolved which have greater and greater power of resistance to the microbic attacks, and thus in time a racial immunity of greater or less power is reached. This is well exhibited, for example, in the case of measles. Through centuries measles has existed as an endemic disease in this country, and by a selective removal of those in whom the disease was of special severity a race has arisen in whom measles is comparatively mild, though even at present some 13,000 die yearly from the disease in England and Wales. That this diminution of the severity of measles is in no way the result of a weakening of the virus is conclusively shown by the result of the introduction of the disease to a race to which the disease is new, when an appalling mortality rate will occur, as was terribly exemplified in the Fiji Islands some 35 years ago. During the proceedings in honour of Darwin at Cambridge Professor Metchnikoff referred to the evolution of resistant strains of bacteria. In the lower organisms which possess to a high degree the power of rapid multiplication we are able to see for ourselves the evolutionary process at work. To the bacterium which passes through hundreds of generations in a day, that day is as a thousand years to higher organisms, and a bacterium may undergo changes in a few hours by which its qualities are absolutely modified. Its virulence as an agent of disease may be enormously increased or profoundly diminished. The attenuation of a virus, while passing through the body of a resistant host, is probably only another example of rapid evolutionary changes in micro-organisms. Such widely differing topics as racial addiction to alcohol and structural modification in parasites can be discussed from their Darwinian side, but we have said enough to show that by a correct appreciation of evolution and the doctrine of the survival of the fittest the medical man is enabled to penetrate more deeply into the mechanism of morbid processes, and to understand more fully the complexities of immunity which prevail in the animal world.

THE BIRTHDAY HONOURS.

THE list of Birthday Honours is somewhat long and we might add is only redeemed from mediocrity by the honours accorded to the medical and scientific professions. No new peers are created, but among those who have received a baronetcy of the United Kingdom is Mr. Henry Morris, the President of the Royal College of Surgeons and the treasurer of the Imperial Cancer Research Fund. Sir Henry Morris, of course, is well known to all medical men for his excellent work in surgery, especially that connected with the kidneys and the other urinary organs, as well as for his munificent gifts to the Middlesex Hospital for the endowment fund of the medical school and his energetic work in support of Epsom College. The other member of the medical profession to receive a baronetcy is Sir Dyce Duckworth, who is well known as a consulting physician to St. Bartholomew's Hospital, who has been medical referee to the Treasury since 1894 and treasurer of the Royal College of Physicians of London since 1884. Among those to receive the honour of knighthood is Mr. Francis Galton, F.R.S., a grandson of Dr. Erasmus Darwin, a man eminent in many branches of science, and the author of that delightful little work, "The Art of Travel." The Royal Army Medical Corps receives an honour in the shape of a knighthood granted to Lieutenant-Colonel W. B. Leishman, M.B., R.A.M.C., so well known for his researches in bacteriology and protozoology. Mr. Thomas Edward Thorpe, C.B., F.R.S., who also receives a knighthood, is the eminent chemist who is the chief of the Government Laboratory. In the Order of the Bath the Right Hon. Sir Ernest Cassel, so well known for his munificent gift of £200,000 for charity which was applied by His Majesty the King for the provision of sanatoriums for tuberculous patients, receives a G.C.B. Surgeon-General Lionel Dixon Spencer, M.D., I.M.S., and honorary surgeon to His Majesty, is made a Knight Commander of the Bath, and among those to receive a Companionship of the Order are Surgeon-General Hayward Reader Whitehead, F.R.C.S., R.A.M.C., principal medical officer, Southern Command, and Colonel de Burgh Birch, M.D. Lieutenant-Colonel Robert Neil Campbell, M.B., I.M.S., officiating Inspector-General of Civil Hospitals in Eastern Bengal and Assam, and Mr. Edgar Thurston, L.R.C.P., the Superintendent of the Government Central Museum of the Province of Madras, are made Companions of the Order of the Indian Empire, while the Kaisar-i-Hind gold medal has been awarded to Dr. Temulji Bhikaji Nariman, L.M., F.R.M.S., of Bombay. Professor William John Ritchie Simpson, M.D., well known for his services in the matter of plague, receives a Companionship of the Order of St. Michael and St. George. Among other names we may mention that of Mr. F. J. Campbell, LL.D., who, blind himself, has done such good work in the establishment and guidance of the Royal Normal College for the Blind and who has been honoured with a knighthood, and the Rev. Hermann Adler, Ph.D., the Chief Rabbi, who has been made a Commander of the Victorian Order. The theatrical profession, which is always ready to spend itself in the cause of charity, and especially in that of hospitals, is honoured in two of its members who receive knighthoods, Mr. A. W. Pinero and Mr. Herbert Beerbohm Tree.

THE PROTEIN CONTENT OF THE CEREBRO-SPINAL FLUID IN GENERAL PARALYSIS.

That protein is a normal constituent of the cerebro-spinal fluid has been known for some 40 years. While an increase in the protein amount in cases of inflammation of the meninges has been commonly recognised, it is only within the last few years that a similar and constant increase in parasyphilitic conditions has been described. Pathological increase in the total protein (albumins and globulins) is now regarded as a definite feature of the cerebro-spinal fluid in general paralysis, an increase generally, though not necessarily, parallel in extent to the degree of lymphocytosis. Further, the lymphocytosis due to parasyphilis is more constantly accompanied by an increase in the protein content than is the lymphocytosis due to tertiary syphilis of the nervous system. The protein increase may amount to four times the normal quantity, and it is easily recognised by any of the simple qualitative tests. The study of the form of protein present is of greater interest and importance. In the normal fluid globulin, probably serum globulin, is the form commonly met with; if albumin is present it must be in exceedingly small amount. In the fluid of the general paralytic, as is pointed out by Dr. Ernest Jones in the current number of the *Review of Neurology and Psychiatry*, the chemical changes are not yet determined with accuracy, and therefore the question is rather to decide which chemical reactions are the most characteristic. The reaction which has been recently introduced by Noguchi deserves mention. It may be used both for the blood serum and the cerebro-spinal fluid. To 0·1 cubic centimetre of clear fluid is added 0·5 cubic centimetre of a 10 per cent. solution of butyric acid in physiological saline; the mixture is heated to boiling, 0·1 cubic centimetre of 4 per cent. sodium hydrate is then added, and the mixture again heated to boiling. If the reaction is positive peculiar light greyish flocculi appear within half an hour, and often within a couple of minutes. Noguchi holds that his reaction is given only by globulin, and especially by the changed form of globulin present in syphilitic and parasyphilitic cases. The great theoretic interest of this fact lies in the recent discoveries that what are provisionally called the Wassermann antibodies are without doubt globulins; in fact, they have been demonstrated to be euglobulins. It may be said that the Wassermann reaction depends on an increase of some special form of euglobulin normally present in the blood serum and cerebro-spinal fluid, and in this euglobulin is contained the antibody responsible for the positive reaction in that test. Noguchi claims that his method shows this increase better than any other. He found it positive in 37 cases of general paralysis out of 43. Dr. Ernest Jones has obtained it in all of 15 cases of that disease, and in no other, except gummatous meningitis and diffuse cerebro-spinal syphilis. Recently Gay and Fitzgerald have published their results with Noguchi's test in 33 cases. In eight cases of general paralysis it was positive, in one of diffuse cerebro-spinal syphilis, and in 13 out of 14 cases of syphilitic meningitis.. It was negative in two cases of congenital syphilis and in eight non-syphilitic cases. Dr. Ernest Jones concludes that while Noguchi's reaction is of less significance than the Wassermann reaction in distinguishing between general paralysis and cerebro-spinal syphilis, it is of the greatest value in establishing a diagnosis between general paralysis and non-syphilitic mental affections.

MILK ADULTERATION.

A fortnight ago we recorded the infliction of a heavy fine upon a dairy company for diluting its milk. Two other serious charges, one being of a similar nature and both connected with the sale of milk, came before Mr. Cluer at the Old-street police-court on the same day last week and were dealt with by exemplary sentences, the magistrate observing to one of the defendants, who complained that trade was so bad that the business was "starvation" for him, that it was rather one of starvation for the babies who had to drink such milk. In this instance the summons was for selling milk containing 19 per cent. of added water, and a previous conviction for an offence of the same character in last December was proved. The offender, James Bright, trading at Bethnal Green, was fined £40, with the alternative of three months' imprisonment. In the other case the borough council of Shoreditch prosecuted the Great Western and Metropolitan Dairies Company who were the defendants to a charge of selling milk from which 32 per cent. of the requisite quantity of butter fat was absent. Against the company two recent previous convictions were proved, obtained respectively by the Camberwell and Bermondsey borough councils, and Mr. Cluer imposed a penalty of £50 with 10 guineas costs. The repeated punishment of the same defendants in cases of milk adulteration and the instances mentioned of convictions of the same company in three different boroughs, all inhabited by a poor population, support the suggestion made in The Lancet of June 19th, to the effect that the proposed licensing of milk-dealers with a view to the prevention of infectious disease might carry with it the possible forfeiture of licences in cases of adulteration, and that special provision should be made so as to render this an effective punishment and preventive measure in the case of companies.

THE RARITY OF CONGENITAL DEFORMITIES IN EGYPT.

Professor F. E. Madden, of the Egyptian Government School of Medicine, has sent to us an interesting note on the rarity of congenital deformities in Egypt, in which he writes: "I have recently operated on an Egyptian boy with cleft palate, a fact not remarkable in itself were it not that this is the first operation for this condition I have performed in Kasr-el-Ainy Hospital during nearly 11 years' general surgical work. Nor are there any children's hospitals in Cairo where such cases might be treated unbeknown to us. With the truly awful struggle for existence amongst Egyptian children, it may well be that infants starting life with such a handicap would be the first to perish, but if the condition existed to any extent I think we would meet with it more frequently than we do. It is interesting to note also that of the many thousands of ancient Egyptian bodies which Professor G. Elliot Smith has unearthed and examined there has only been one case of cleft palate in the whole series. In the third Bulletin of the Archæological Survey of Nubia, published by the Survey Department in Cairo, 1909, this unique specimen (found by Dr. D. E. Derry) is thus described: 'In Grave No. 91 was found the skeleton of a young woman, over 20 years of age. She differed from the large majority of the women in this cemetery in being orthognathous; but though the margins of her nares were sharp, the nose was rather flat and broad, and the mandible distinctly Negroid. Her skull is of special interest, as it exhibited an extreme form of cleft palate ; a wide gap extends from the posterior margin of the palate to the posterior edge of the premaxilla in front. The deficiency measured 23 by 24 millimetres, and is symmetrical: in other words the palatal processes of the palate and the superior maxilla are quite rudimentary.' This patient lived between the fourth to the sixth centuries A.D., and her skull now forms one of the most interesting exhibits in our Anatomical Museum, eloquent evidence of one of the very few mistakes made by Nature in the shaping of primitive uncivilised man. The only case of talipes met with by Professor Elliot Smith among the ancient Egyptians was described by him in the *Bulletin de l'Institut Égyptien*, 5e Serie, Tome 1, pp. 45–47. *The left foot of King Siptah*, one of the last Kings of the XIXth Dynasty, was found to be 'distorted in the manner known as talipes equino-varus.' The rarity of congenital deformities generally among the *modern* Egyptians is well seen by referring to the statistics of the Kasr-el-Ainy Hospital, compiled by Dr. H. B. Day, the medical registrar, for the last two years. In 1907, with a total of 2630 surgical admissions, the only congenital deformities were 5 hare-lips, 2 talipes, 2 cases of imperforate anus, and 1 of extroversion of the bladder; while in 1908, of 2702 admissions, there were 3 hare-lips, 2 cases of imperforate anus, 1 of hypospadias, 1 of undescended testicle, and 1 of meningo-encephalocele." Professor Madden considers it to be impossible to endeavour to explain this rarity of congenital defects in Egypt, unless the time-honoured scapegoat of our too modern civilisation be invoked to account for their frequency in other countries.

FLIES AS A NUISANCE.

THAT flies can convey infection is undoubted, but the question of whether or no they convey the infection of summer diarrhœa has been stated by Sir Shirley Murphy to be still unsettled.[1] But that flies are a nuisance and an annoyance, that they may come straight from a dung-heap or an even worse locality and settle on articles of food or fall into milk or other fluids, is certain, and, moreover, at least one species, Stomoxys, inflicts a very painful bite. These facts give special interest to some preliminary reports to the Local Government Board which are now before us on Flies as Carriers of Infection. The final report on the whole subject will be written by Dr. S. M. Copeman and will appear at a later date. The three reports published comprise one by Mr. E. E. Austen on how to distinguish the differing species of flies commonly found in houses—namely, Musca domestica, Stomoxys calcitrans, and Homolomyia canicularis. The difference in the sexes is shown by the relative position of the eyes to one another. In the female they are wide apart, but in the male they are close together. The three species are easily distinguishable by the arrangement of the veinings on their wings, a point well shown in the illustrations supplied with the report. Mr. Austen also supplies a note on the various kinds of flies received by him for examination during the summer and autumn of 1908. Musca domestica largely outnumbered all other kinds received, but it is worthy of mention that some specimens were received of Protocalliphora groenlandica, a species which is not ordinarily found in dwellings. Mr. Austen says that its larvæ are evidently imported in sacks of bones received at glue and size works, and that possibly it breeds in these works. It was found in numbers on August 10th in the kitchen of a London County Council school about 150 yards from works of this description. The last report is by Mr. J. P. Jepson on the Breeding of Musca Domestica during the winter months, and the inquiry was carried on in the Quick Laboratory, University of Cambridge. The conclusions were that flies do breed in favourable circumstances such as they are placed in during mild winters, but that whether they do so in ordinary circumstances is uncertain, although it is probable that such is the case in warm places. On the whole, it would appear from the various researches on flies which have been undertaken of late—for instance, those by Dr. W. H. Hamer[2] for the London County Council, and by Dr. J. T. C. Nash[3]—that the poet, be he William Oldys or another, was in error when he sang—

> "Busy, curious, thirsty fly,
> Drink with me and drink as I."

It would be more reasonable to invite the fly to a separate drink of formalin.

THE GLOUCESTER ROYAL INFIRMARY.

THE King, on the occasion of his visit to Gloucester on June 23rd, was graciously pleased to give his permission for the Gloucester General Infirmary to be known henceforward as the Gloucester Royal Infirmary, "in recognition of the admirable work done by those responsible for its management, and the devoted and successful efforts of its staff in the prevention and alleviation of human suffering." Mr. E. Dykes Bower, senior surgeon to the infirmary, informs us that the last occasion when Gloucester received the honour of a Royal visit was on July 24th, 1788, when George III., with the Queen and the Princesses Augusta and Elizabeth, visited the hospital and, as minuted in the infirmary books, "expressed their approbation of the attention of the Faculty to the health of the patients, and of the cleanliness and good order with which the House appeared to be conducted." The infirmary was founded in the year 1755, when King George II. presented 9200 feet of rough oak timber from the Forest of Dean for use in the fabric of the new building. We congratulate the Gloucester Royal Infirmary upon the well-won honour now conferred upon it by the illustrious descendant of its first Royal benefactor.

THE ABUSE OF HIGH-FREQUENCY CURRENTS.

IN view of the use, or rather abuse, to which high-frequency electrical treatment has been put during recent years, it takes a certain courage to come forward with a contribution bearing on this particular therapeutic measure. That "high-frequency" methods have obtained such a malodorous reputation among some members of the medical profession is not the fault of the methods themselves. The greatest curse has been the fact that the apparatus is imposing to the non-expert eye, it makes a lot of noise, and there are plenty of sparks and violet brush discharges, which can be allowed to come into momentary contact with one's person with comparatively trifling results; and when applied in the usual way the patient experiences no unpleasant sensations from them, with possibly a few exceptions. Perhaps no combination of circumstances than those just detailed could have been better devised with the object of fitting in with the schemes of unskilled and more or less unprincipled persons posing as experts in electrical treatment. One of the least pleasant features of the situation is the readiness with which many qualified medical men, who ought to know better, have supported institutions throughout the country by sending their patients to them for a course of treatment while making no inquiry as to the methods of procedure of those actually responsible for the treatment. The possibility of high-frequency currents doing good in certain cases has never been doubted by those who were in a position to form an opinion on the matter, but, with what has taken place on many occasions in their minds, few medical men with real knowledge have been tempted to express themselves in any way on the subject. The time would seem opportune, however, to do something to appraise the value of high-frequency treatment with an approach to accuracy, and on this account we would draw attention to a paper in this issue by Dr. C. F. Bailey of Brighton. Dr. Bailey has brought forward his arguments in a very straightforward and concise way and quotes several cases which appear to bear out his contentions. A great feature of high-frequency treatment is that electrical energy alone seems to be the ruling factor. In all other electrical methods the action is complicated by chemical processes, the products of electrolysis, migration of ions, and so on, and this differentiation makes a study of the action of high-frequency currents on living tissues one of exceptional interest.

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[1] THE LANCET, Dec. 19th, 1908, p. 1834.

[2] THE LANCET, March 21st and Dec. 19th, 1908.

[3] THE LANCET, Dec. 5th, 1908, p. 1668.

THE PRACTICAL VALUE OF THE ESTIMATION OF THE COAGULATION-TIME OF THE BLOOD.

THE method of estimating the coagulation-time of the blood introduced by Sir Almroth E. Wright, and the practical conclusions obtained by him in regard to the influence of calcium salts and citric acid upon the coagulation-time, have been criticised in some recent papers by Dr. T. Addis.[1] Dr. Addis claims that the method he employs is more accurate than that of Sir Almroth Wright, and that calcium salts and citric acid do not effect any change in the coagulation-time of the blood. Wright's method and its value have been exhaustively studied in an interesting paper published in the *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, Band XX., p. 218, by Dr. Wolfgang Denk and Dr. J. Hellmann, and we recommend our readers to study this interesting communication. Its authors review the various methods employed to estimate the coagulation-time and point out the importance of certain details of technique—e.g., the effect of variations of temperature, the effect of taking the blood from a vein or from a simple puncture, and the influence of pressure around the puncture whereby the blood becomes mixed with tissue fluids and the coagulation-time considerably accelerated. The object of their research was to examine systematically the coagulation-time of the blood in a variety of conditions in which there was any anomaly of the blood, or in which hæmophilia was suspected, in order to establish the value of routine examination of the coagulation-time as a precautionary measure before operation in surgical cases. They used Wright's method, taking the most rigid precautions to avoid sources of error, and they regard it as the most trustworthy. They insist on the importance of cleaning the finger with ether or benzine, the avoidance of pressure, and the use of a fresh puncture for each examination made. To ensure the temperature being constant the pipettes used in this method are at once placed in a thermos flask containing water at 37° C. They found that in normal persons the coagulation-time showed very little variation, being 2 minutes 30 seconds. The time is accelerated in malignant cachexia and in marasmus. This acceleration is not due to the malignant growth, since 20 observations on cases of malignant disease without cachexia did not show it. They give a remarkable table, showing their observations on 18 cases of various kinds in which the coagulation-time was longer than the normal, including some of hæmophilia and of purpura, in nearly all of which the history showed the occurrence of abnormal and intractable bleeding, either spontaneous or as a sequel of some operative procedure. In two of these cases the coagulation-time was over five minutes, and in nearly all of them it was over three. They confirm the observations of previous workers as to the lessened coagulability of the blood in hæmophilia. They also record observations on the effects of calcium lactate, of milk diet, and of citric acid respectively upon the coagulation-time, and they confirm in every detail the contentions of Wright and his co-workers. They recommend the prophylactic administration of lime salts or serum injections controlled by observations on the coagulation-time before undertaking operations upon bleeders, and further advise that in the after-treatment of patients with normal or accelerated coagulation-time, milk and other agents increasing that coagulability should be avoided. Their observations form a striking confirmation of the results obtained by Sir Almroth Wright by his own methods.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE sixty-eighth annual meeting of the Medico-Psychological Association will be held partly at Wakefield and partly at Leeds. The various committees will meet at the Queen's Hotel, Leeds, on July 21st, and the council will meet on July 22nd at Wakefield Asylum. The council meeting will be followed at 11 A.M. by the annual meeting. At 1 P.M. the members will be entertained at lunch by Professor W. Bevan-Lewis. After lunch the retiring President, Dr. Charles A. Mercier, will introduce Professor Bevan-Lewis, his successor, who will deliver an address, and Dr. A. Helen A. Boyle will give an account of an attempt at the Early Treatment of Mental and Nervous Cases, with Special Reference to the Poor. At 10.30 A.M. on July 23rd the following papers will be read at the Queen's Hotel, Leeds:—Dr. J. R. Gilmour on the Mental Symptoms in Exophthalmic Goitre and their Treatment; Dr. Nathan Raw on a case of Acute Mania relapsing into Unconsciousness lasting Seven Months; and Dr. G. Scott Williamson on the Cerebro-spinal Fluid in General Paralysis and the Nervous Lues. In the afternoon of the same day papers will be read by Dr. G. Scott Williamson on the Bacillus paralyticans; Dr. Ford Roberston on the Experimental Production of General Paralysis; and Mr. L. O. Fuller on Alcoholism, Crime, and Insanity. The annual dinner will take place on Thursday, July 22nd, at the Queen's Hotel, Leeds, at 7.30 P.M. Further particulars may be obtained from the honorary secretary, Dr. C. Hubert Bond, 11, Chandos-street, Cavendish-square, London, W.

THE CAUSES OF CHEYNE-STOKES BREATHING.

THE remarkable form of respiration known by the name of its earliest observers as the Cheyne-Stokes breathing has recently been carefully investigated by Dr. C. Gordon Douglas and Dr. J. S. Haldane, the reader in physiology at Oxford. Cheyne-Stokes or periodic respiration was originally observed by Dr. Cheyne in 1818, and again by Dr. Stokes of Dublin in 1846, but the cause or causes of it are obscure. The alternate movements of inspiration and expiration gradually increasing in intensity or vigour up to a certain point, and then diminishing till they are succeeded by a pause of variable duration, have been attributed to disease of the respiratory centres, to abnormal conditions of the heart, and to disease of the brain, and have been observed in narcotic poisoning, in healthy men at high altitudes, in infants, and in hibernating animals. Lately, Dr. M. S. Pembrey and Dr. R. W. Allen have found that pathological Cheyne-Stokes breathing is abolished by the administration of either oxygen or air containing excess of CO_2. Dr. Douglas and Dr. Haldane in their experiments recorded in the number of the *Physiological Journal* for June, 1909, found that the Cheyne-Stokes breathing could be easily produced experimentally and have taken advantage of this fact in order to investigate the causes of periodic respiration. They found that if apnœa were produced by deep respirations the return to normal breathing was preceded by a phase of Cheyne-Stokes respiration, and that this periodic breathing is produced by periodic occurrence and disappearance of the (indirect) excitatory effects of want of oxygen on the respiratory centres. The want of oxygen may be due to abnormal deficiency in the alveolar oxygen-pressure, or it may be due to effects on the circulation of changes in the breathing, or to both causes combined.

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[1] Brit. Med. Jour., April 24th, p. 997, and Quarterly Journal of Medicine, Jan. 1909, p. 148.

THE AFTER-CARE OF SANATORIUM PATIENTS.

WE have received a paper on the After-care of Sanatorium Patients, read by Dr. H. W. McConnel on June 9th before the Conference held by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis at the Art Gallery, Whitechapel, in connexion with the exhibition which we have already noticed. The paper is of so practical a character that a summary of its chief contents is warranted. It contains the results of the experience of seven years' work at Kelling Sanatorium. The objects of after-care are given as twofold—viz., to arrest relapse and to prevent the development of the loafer. Dr. McConnel points out that the stay at charitable sanatoriums has usually to be curtailed from family reasons or from lack of funds, and that it is as a rule shorter than is desirable. There is, therefore, great scope for advice to the patient in regard to his habits of life and his occupation after leaving the sanatorium. He also strongly insists that there is a great field for measures to prevent the tendency to loaf and to shirk likely to be engendered by the treatment in sanatoriums, unless the objects of the whole scheme are kept in prominence, these being to render patients fit for active work again. The work done by each patient at Kelling is selected by the medical officer and controlled by an overseer. There is also a system of "working patients," who are really ex-patients, eight men and two women, kept on at the sanatorium and selected from the earlier and more favourable cases. They receive their board and lodging free, and in addition a little weekly pocket-money, ranging from 2*s.* to 5*s.* They have more definite working hours than the ordinary patients, and perform more definite forms of work. Another important aspect of after-care is the giving of advice and assistance to patients on leaving. A routine practice is followed at Kelling of considering the condition and circumstances of each case one month after admission. What work the patient is to do on leaving the sanatorium is discussed and the conditions of life in regard to his former occupation are considered, both to see how they can be improved with a view to his return to his former work, or, in case this may be radically unsuitable, with a view to advising him in regard to some change. In addition to this, each outgoing patient receives full advice from the resident medical officer on his departure, with special directions how best to continue his treatment. Each is also advised to have a bedroom to himself, and parents are instructed to bring up their children to some career affording them the best conditions to resist the onset of the disease. In regard to after-care, in the exact sense of the words—viz., care after leaving the sanatorium—an attempt is made to keep in touch with as many of the patients as possible, with the object of giving them advice and help. Each old patient receives a Christmas-card each year, with a request for information as to his health and progress. If no answer is obtained a letter is sent enclosing a stamped, directed card for a reply, and if this fails to bring any reply, enquiries are made, if possible, through someone known to be interested in the case. Dr. McConnel concludes his paper with a strong plea that all sanatoriums should adopt measures for after-care. His recommendations and suggestions are practical, and his paper constitutes a striking record of good and truly philanthropic work.

THE USE OF ELECTRIC CURRENTS FOR THE SEPARATION OF TUBERCLE BACILLI FROM URINE.

WE publish in this week's issue of THE LANCET an interesting research by Dr. Charles Russ upon microbic electric movements and an ingenious application of this property of bacteria to the separation of the tubercle bacillus from urine. It was found that certain bacteria tend to aggregate at one or other electrode when a suitable current is passed through a fluid in which they are suspended, and that when the current is reversed they move in the opposite direction—i.e., towards the electrode the polarity of which now becomes the same as that at which they had previously collected. This aggregation varies with the nature of the electrolyte in the fluid in which the bacteria are suspended. Dr. Russ discusses the cause of this aggregation, and offers as the most probable explanation the suggestion of an affinity between products of electrolysis and the bacteria, leading to their conveyance together with the electrolytically dissociated ion towards the appropriate pole. The fact that a similar aggregation occurs with bacteria killed by boiling is strong evidence against the movement being the result of electrical processes generated in the bacterial protoplasm. Applying this process to the separation of tubercle bacilli from urine, Dr. Russ, after repeated and laborious trials of a number of electrolytes added to the urine, obtained the best results with a mixture of ethylamine, lactic and bromic acids in certain proportions. By using a special form of electrode so arranged as to trap the bacilli when aggregated in its vicinity, he was able to recover tubercle bacilli from urines to which they had been added in relatively small numbers, although attempts to prove their presence by centrifugalisation failed. He suggests, also, that further research on these lines may possibly serve to assist in the specific discrimination of bacteria. In any case, the results so far obtained are highly interesting and promise to have a real practical value, since a trustworthy method for the early detection of tubercle bacilli in urine would be of substantial assistance in diagnosis.

PULMONARY TUBERCULOSIS IN AUSTRALIA.

WE have received a copy of a pamphlet on Phthisis in Australia, with more especial reference to Western Australia, written by Dr. J. H. L. Cumpston, medical officer of the Central Board of Health, Perth, Western Australia, and published by the Registrar-General's Department of that State. A number of statistical tables and diagrams are included, and from an analysis of these Dr. Cumpston concludes that there has been since about 1885 a progressive decline in the death-rate from pulmonary tuberculosis throughout Australia as a whole, and in each individual State with the exception of Western Australia, in which the death-rate declined until 1899, rose again until 1901, since which date it has remained practically stationary. The explanation suggested to account for the maintained death-rate in Western Australia is that it has received contributions from each of the other States, more especially during the sudden increase in its population due to the discovery of gold-fields and to the energetic policy of importing agricultural settlers pursued by the authorities. In support of this suggestion it is shown that in the years 1903-05, more than half of the total cases were in people who had been less than ten years in the State. The highest mortality from pulmonary tuberculosis in Western Australia occurs between the ages of 25 and 35 years. Between 15 and 25 years more females die from the disease than males, while below the age of 15 years and above that of 25 the male deaths are in excess. In Australia the decline in the death-rate from this disease commenced soon after the discovery of the tubercle bacillus, and according to Dr. Cumpston this seems to be the only factor in Australia that can at present be shown statistically to have had any effect. The passing of effective Health Acts cannot be regarded as the cause, since these only date from 1890 in Victoria to 1904 in Tasmania. That there is scope for improvement is shown by the fact that during 1907 the Commonwealth suffered a loss of 2863 deaths from this disease, of which 206 occurred in Western Australia. At the same time the death-rate of the Commonwealth from pulmonary tuberculosis compares very favourably with that of most other countries, being only 808 per 1,000,000 of the population for the year 1905, compared with 1144 for England and Wales for the same year. Dr. Cumpston strongly recommends the prohibition of any patients with this disease from other countries landing at any port within the Commonwealth, in order to prevent them from becoming a charge upon public funds and centres of fresh infection. We are strongly in sympathy with any practical measure directed to the prevention of the spread of this disease, but we deprecate any tendency to treat the unfortunate sufferer as a pariah to be avoided, and a rigid enforcement of such a proposal as that suggested by Dr. Cumpston would be attended with serious hardship and might prevent the acquisition by the Commonwealth of some desirable emigrants with arrested disease.

THE PHYSIOLOGICAL ACTION OF ALLYL ISOTHIOCYANATE.

IN the *Bio-Chemical Journal* for April 26th Dr. E. Wace Carlier describes some aspects of the physiological action of allyl isothiocyanate, a substance which within the past few years has received some attention as a therapeutic agent. In the form of oil of mustard it is widely used as a rubefacient and counter-irritant. It is much more toxic than allyl sulphide, as was found by comparative experiments on animals. It attacks the respiratory system much more powerfully than the vaso-motor, though its effects pass off more quickly from the former than from the latter. Poisonous doses kill by paralysing the respiratory centre, as with allyl sulphide. The expiratory centre seems to be more affected than the inspiratory, resulting in considerable chest inflation. A tolerance is set up for the drug on the administration of repeated doses of the same strength, so that a stronger dose has to be given each time to produce an equal effect. By the first dose the vaso-motor centre is depressed and recovers but slowly, but from subsequent doses it not only recovers more quickly but is less affected and becomes stimulated, so that the blood pressure rises high above the normal. The minimum fatal dose is approximately one-fifth minim per kilogramme of body weight, while that of allyl sulphide is one-half minim, when injected into the jugular vein. Both allyl sulphide and allyl isothiocyanate act in a similar manner upon the organism, the latter being the more powerful. Both paralyse the respiratory and vaso-motor centres, both produce muscular spasms and affect the heart beat, and both lower the body temperature, as is the case with most essential oils. Neither is recommended by Dr. Carlier for internal administration, despite the fact that they are commonly ingested in minute quantities with food. In this connexion it is of interest to note that an introductory paper on the Use of Allyl Sulphide in Tuberculosis, by Dr. Paul Bartholow, appeared in the *New York Medical Journal* for May 22nd.

AT a meeting of the Physiological Society held at Oxford on June 26th, Professor F. Gotch, who presided on the occasion, after speaking in warm terms of Dr. Pavy's life-work, presented to him, in commemoration of the eightieth anniversary of his birth, a silver bowl bearing the following inscription: "Frederick William Pavy, M.D., F.R.S., May 29th, 1909. From the Physiological Society in token of affection and admiration."

Professor Ernest W. White, M.B. Lond., of Betley House, near Shrewsbury, late resident physician and superintendent of the City of London Asylum (1887–1905), has been elected Emeritus Professor of King's College, London (University of London), on retiring from the chair of psychological medicine after 20 years' tenure of the same.

THE King has given permission to Mr. Edward S. Crispin, Director of the Soudan Medical Department, Khartoum, to accept and to wear the Imperial Ottoman Order of the Osmanieh of the Fourth Class, which has been conferred upon him by the Khedive of Egypt in recognition of valuable services rendered by him.

THE London County Council on June 29th expressed its agreement with the report of a departmental committee on the London ambulance service, in favour of the extension of the service of rapid ambulances for non-infectious cases initiated by the Metropolitan Asylums Board.

THE DARWIN CENTENARY.

(Concluded from p. 1870.)

THE celebration of the centenary of Charles Darwin, which took place last week at the University of Cambridge, did not come to a conclusion until Thursday afternoon, by which time we had gone to press. The proceedings, however, on Thursday were every whit as interesting as those of Tuesday and Wednesday.

In addition to the addresses which we published last week the following three addresses were presented by Dr. Norman Moore, Senior Censor of the Royal College of Physicians of London, Sir Henry Morris, President of the Royal College of Surgeons of England, and Dr. Norman Moore, for the President of the Royal Society of Medicine, respectively, to the University of Cambridge on the occasion. They will be read with interest, showing, as they do, the intimate association of Darwinian research with the progress of medicine and surgery, as well as the close connexion between Darwin personally and the medical profession.

The Royal College of Physicians of London to the Chancellor, Masters, and Scholars of the University of Cambridge, greeting:—

We, the President and Fellows of the Royal College of Physicians of London offer you our congratulations on the centenary of the birth of the illustrious Charles Darwin.

We have the honour of association with you in the lives of some of your most famous men of science. Caius and Gilbert and Harvey and Glisson were all Fellows of our College, and each of them was in his time chosen to its highest office.

Our College, founded in 1518, was the earliest scientific society of England. Its Fellows have had a considerable part in the advancement of Natural Science studies, and the collections of our President, Sir Hans Sloane, were the beginning of the British Museum. Thus we belong to the world of Natural Science as well as to that of our own profession, and we have felt profoundly in our particular studies the impulse which the publication of the "Origin of Species" and the subsequent work of Darwin gave to Natural History and to every subject in any way related to it. We admire his generous character as well as his devotion to the elucidation of the problems of Biology, and we join the University most cordially in commemorating so great and so virtuous a man.

We have desired our Senior Censor to present this address to you.

R. DOUGLAS POWELL, President.

June 16th, 1909.

An Address from the Royal College of Surgeons of England to the Chancellor, Masters, and Scholars of the University of Cambridge:—

The Council, Fellows, and Members of the Royal College of Surgeons of England experience in a very special degree a deep sense of gratification in having been honoured by an invitation to send a delegate to the Commemoration by your University of the Centenary of Charles Darwin's birth and the fiftieth anniversary of the publication of his great epoch-marking work "On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life."

We feel a peculiar, indeed an almost personal and certainly a professional, pride in taking part with your great Commonwealth of learning and knowledge as a whole, and with Christ's College and the Faculty of Natural Sciences in particular, in this In Memoriam celebration of one who in so conspicuous and brilliant a manner added lustre to your great and ancient University.

The numerous and intimate personal and family associations of Charles Darwin with the University of Cambridge are equalled by similar connexions with the profession of medicine. We are mindful that his grandfather, the celebrated scientist and poet, Dr. Erasmus Darwin, was a physician at Lichfield, and afterwards at Derby; that his father was a very successful medical practitioner at Shrewsbury; that his only brother was a Bachelor of Medicine of Cambridge; and that his paternal uncle and he himself were intended for the medical profession, and actually studied physic at the University of Edinburgh.

The sciences to which Charles Darwin devoted his life and on which he built his great generalisations are, some of them, ancillary to medicine; and as developed and interpreted by him they transfigured many of the doctrines and classifications of disease, illumined with new conceptions pathology as well as biology, and opened up fresh avenues of thought and new pathways of investigation leading to a more correct and scientific knowledge and practice of the resources of surgery.

To the Museum of our College Charles Darwin presented about 30 valuable specimens of fossil mammalia collected by him during the voyage of the *Beagle*, a fact which may not be generally known.

To the students of medicine, as well as to the students of general biology, Darwin has left on record a caution of the utmost importance, and at no period more than at the present time have they had greater need to be reminded of it. He [illegible] his neglect of [illegible] oved one of the [illegible] ical knowledge and aptitude he would have gained by the practice of dissection would have been invaluable for all his future work; and how the want of these, and his incapacity to draw, had been an "irremediable evil," and that "a great pile of manuscript" which he had made during the voyage of the *Beagle* had in consequence "proved almost useless." Charles Darwin esteemed it a high honour to have been elected an honorary member of the Royal Medical Society of Edinburgh and an original honorary member of the Physiological Society which was founded in London in 1876. By his efforts to forward legislation on the question of vivisection, by his private communications to physiologists and others, and by his letters to the editor of the *Times* "on the right of experimenting on living animals," he showed the righteousness as well as the wisdom of his judgment by denouncing the practice of vivisection for "mere damnable and detestable curiosity," whilst he endeavoured to obtain "justice to science," and gave proof of his willingness to bear his "share of the abuse poured in so atrocious a manner on all physiologists." Though, in his own words, "Hippocrates had taken the wind out of my sails," though when informed of the views on pangenesis of this philosopher of antiquity Charles Darwin admitted they seemed almost identical with his own, and although theories somewhat akin to those of the "Origin of Species" had been advanced by Buffon, Lamarck, and Erasmus Darwin, and the principle of natural selection had been enunciated by Dr. Wells and Mr. Matthews, yet the central hypothesis of the "Origin of Species" came in 1859 as a revelation to the historians of scientific ideas as well as to all the biological specialists then living. Charles Darwin knew that he was regarded as "the greatest revolutionist in natural history of that, if not all centuries," and he naturally yearned for some half dozen great and sound scientists to accept his views, for then he would have no fear of their ultimate success.

And whose were the opinions he most especially valued and "longed to learn"? They were those of J. D. Hooker, Charles Lyell, Huxley, Richard Owen, W. B. Carpenter, Milne-Edwards, and Asa Gray, every one of whom except Sir Charles Lyell had received a medical education and was the holder of a medical degree or other medical qualification. Two of them, Huxley and Owen, had been intimately associated with the Royal College of Surgeons of England, Huxley as a Member of the College and Hunterian professor, and Owen as a Member and Fellow of the College and Hunterian professor and conservator of the Hunterian Museum for many years. Hooker and Huxley were the most sympathetic exponents and staunchest champions of the Darwinian principles, and if Owen never actually expressed a definite opinion of Darwinism he at least inclined to the theory of "natural selection," and conduced to the writing of a letter in which Charles Darwin evinced a candour, a modesty, a tolerance of disagreement, and an indifference to the claims of priority which so supremely characterised him throughout his whole scientific career.

It is interesting to us who are connected with the College of Surgeons to re-call that in 1859 Owen delivered the Rede lecture at Cambridge—his subject being the "Classification of Mammalia"—and that he then received the degree LL.D., thus becoming the recipient of the first honorary degree ever conferred by this University. Also in the same year the remains of John Hunter, the great founder of scientific surgery, the fruits of whose labours will for all time be the chief glory of our College, were removed from the vaults of St. Martin's-in-the-Fields to Westminster Abbey. If, instead of the re-interment of the body—lifeless for 60 years—Hunter could have been restored to life in this world, it is only reasonable to conclude from the opinions expressed in several of his writings that he would have greeted the "Origin of Species" with great delight, and would have given it the readiest and fullest acceptance.

For these amongst other more general reasons does our College, with special zest and gladness, beg to offer to the University our best wishes for the success of these memorial ceremonials, and to thank her for affording us the pleasure and satisfaction of joining with the representatives of the liberal arts and sciences from all parts of the world in this tribute of honour to the name and fame of one of her most illustrious sons.

HENRY MORRIS, President.

The Royal Society of Medicine to the Chancellor, Masters, and Scholars of the University of Cambridge, Greeting:—

We, the President, Fellows, and Members of the several sections of the Royal Society of Medicine congratulate the University of Cambridge on the occasion of the centenary of the birth of Charles Darwin. The glories of your University in Science were already brilliant when this great luminary appeared. Newton, greatest of all men of Science, had explained the order of the Universe, and Harvey, in the Microcosm of Man, had demonstrated the course of the circulation. Gilbert had discovered the magnetism of the earth, Woodward had laid the foundations of Geology, and Ray had taken the first steps in the systematic arrangement of animals and plants, while the whole circle of scientific thought had been influenced by that philosopher of whom your immortal Dryden says—

"The world to Bacon does not only owe
Its present knowledge but its future too"

Amid such a galaxy it might well seem difficult for any orb of equal brightness to shine forth, yet in Natural History and in every science related to it, it may be doubted whether any man, since the time of Aristotle, has had a greater effect upon the course of study than Charles Darwin.

That so many of these your most illustrious men of science have been members of the profession of Medicine is sufficient to show how closely its practice and the investigations of Disease are bound up with every other science, and on this auspicious occasion we and all members of our profession rejoice to remember that the great man in whose celebration you have asked us to take part was descended from two generations of doctors of Medicine. Charles Darwin's mind may be said to have thus inherited that desire—

Rerum cognoscere causas—

which pervades our profession.

In common with the whole world of science we offer you our congratulations and join with you in remembering Charles Darwin with gratitude.

WILLIAM S. CHURCH.

On Thursday morning the Chancellor conferred the degree of Doctor of Science upon numerous famous men of science, many of whom had worked along paths which had been made possible by Darwin's great discoveries and achievements. The particular contributions of most of them to scientific knowledge will be familiar to our readers. When the Congregation was declared open, the Public Orator, Dr. J. E. Sandys, presented those about to receive the degree to the Chancellor in felicitous language, some of the topical remarks displaying very ingenious Latinity and being received by those who were fortunate enough to take the allusions with applause and laughter. The recipients of the degrees were presented in the following order: Prince Roland Bonaparte, Professor Edouard van Beneden, Professor Geheimrat Hofrat Otto Buetschli, Professor Robert Chodat, Mr. Francis Darwin, Professor Karl F. von Goebel, Professor Ludwig von Graff, Professor Richard Hertwig, Professor Harold Hoeffding, Professor Jacques Loeb, Dr. Edmond Perrier, Professor Gustav Albert Schwalbe, Professor Hermann Graf zu Solms-Laubach, Professor Clement Timiriazeff, Professor Frantisek Vejdovsky, Professor Max Verworn, Professor Herman Vochting, Professor Hugo de Vries, Dr. Charles Doolittle Walcott, Professor Edmund Beecher Wilson, and Professor Charles Renne Zeiller.

The presentation of the degree to Mr. Francis Darwin was made the opportunity of a remarkable reception to Darwin's distinguished son, alike on the score of his paternity, of his special scientific work as one of the most distinguished morphological botanists in the world, and of his personal popularity. The presentation of Professor de Vries was also made the subject of special applause, a notable incident, as Professor de Vries' work on mutation has been sometimes, but too narrowly, regarded as antagonistic to Darwin's position.

The Rede Lecture, which followed, was delivered by Sir Archibald Geikie, President of the Royal Society, who addressed his audience upon Darwin as a geologist. After a rapid survey of the position of geology before Charles Lyell published in 1830 his "Principles of Geology," in which the changes of the earth's surface were referred mainly to causes now in action instead of to catastrophic happenings in the past, the lecturer went on to show how Darwin's work had added to our knowledge of the movements of the terrestrial crust, and had furnished at the same time evidence in detail of the influence of various natural agencies in producing profound alterations in the conformation of the globe. He considered that the geology of the "Origin of Species" formed a most valuable contribution to the philosophy of the subject, and he claimed Charles Darwin as a master of geological science.

With the Rede lecture the formal celebration of the Darwin Centenary came to a close, and on all hands it was allowed that the University of Cambridge had honoured herself in the way in which she had done honour to her distinguished son. Of course, an ancient university with its time-honoured stately buildings makes a perfect background for a pageant, while the gorgeous academic costumes, survivals of mediæval habit, turn contemporary mortals for the time being into adequate imitations of their forefathers, and make them fit the landscape as well as adorn it. Full advantage was taken of the natural opportunities of Cambridge for doing justice to such an occasion, while the organisation of the various functions was a model of completeness and smooth working.

THE RESEARCH DEFENCE SOCIETY.

THE annual meeting of the Research Defence Society was held at the rooms of the Royal Society of Medicine, 20, Hanover-square, on June 25th, when Lord CROMER presided and delivered an address to a representative and interested audience. Letters of regret for their unavoidable absence, and of sympathy with the objects of the society, were read from Sir T. Clifford Allbutt, Sir Lauder Brunton, Mr. Sydney Holland, Dr. J. Hughlings Jackson, Sir Henry Morris (President of the Royal College of Surgeons of England), Mr. John Lentaigne (President of the Royal College of Surgeons in Ireland), Sir Frederick Treves, Sir Norman Lockyer, Sir L. Alma Tadema, Lord Robert Cecil, Lord Northbrook, the Duke of Wellington, and Lord Curzon.

Lord CROMER said that the Research Defence Society could not attempt to emulate, and still less to rival, the proceedings of those who thrilled the minds of the public with the imaginary tortures inflicted on a brown dog. "The society does not plaster the railway stations of the metropolis with caricatures of Mr. Stephen Coleridge and his allies. These things must be left to our opponents. On the other hand, our movement must appeal to the great body of our countrymen and countrywomen in the interests of humanity." The speaker very strongly held the opinion that those who believed in vivisection, and not those who opposed it, were acting in the true interests both of the human and of the animal race. It might well be that in some rare instances, physiologists, carried away by the excitement of the struggle in which they were engaged, lost sight of that aspect of the question to which the more moderate members of the anti-vivisection societies very rightly and naturally wished to draw attention. It was well, therefore, that the physiologist, in conducting his experiments, should always remember that he was acting in the presence of the enemy, and that his critics would be little inclined to show him mercy should he inadvertently pass the line which separated the infliction of suffering which was justifiable from that which could not be justified. Nothing was more difficult than to draw this borderline. Every man who went out shooting, hunting, or fishing; every man or woman who wore a fur coat; every lady with the plumage of some beautiful bird in her hat was directly or indirectly the cause of death or suffering to animals. More than this, every individual who ate meat caused not merely animal death but was indirectly responsible for the cruel operations which were performed on sheep and on bullocks in order to render their flesh more tender. If it was justifiable to inflict death and pain on animals in any circumstances, surely the justification assumed the form of absolute proof when death or pain was inflicted in the interests of humanity. If anyone would take the trouble to read the voluminous evidence presented to the Royal Commission on Vivisection, whose report he (Lord Cromer) most earnestly trusted would soon be issued, it would be found that there was not a single alleged case of extreme and unnecessary cruelty brought forward by the Anti-Vivisection Society which did not hopelessly break down under cross-examination. It was very natural that this should be the case, not merely because the fact of a man being a physiologist in no way debarred him from entertaining those feelings of sympathy towards the animal world which were felt by every civilised human being, but because, putting the matter on much lower ground, the struggles of an animal in pain tended to nullify the accuracy of the experiment which was being conducted, and thus rendered abortive the experiment. This point had been clearly brought out in a very eloquent manner recently by that eminent French physiologist, Dr. Charles Richet. It was not pretended that suffering, whether by inoculation or vivisection, was not inflicted on animals, but it was asserted by the society that the suffering was reduced to a minimum—to the irreducible minimum justified by the results which are obtained. The antiseptic method had reduced the mortality in lying-in hospitals from as much as 40 per cent. to 0·2 per cent. It was the direct outcome of the experimental method. "I would ask," continued Lord Cromer, "if the lives of the rabbits sacrificed by Villemin in 1864 and Koch in 1878 are to be weighed for one moment in the balance in comparison with the marvellous discoveries in connexion with tuberculosis made by those eminent physiologists? These discoveries have created nothing less than a revolution in social hygiene, and in this country have reduced the mortality on account of this terrible dis[illegible] 50 per cent. Moreover [illegible] Koch was able to disco[illegible] is possible to ascertain [illegible] reverse. It would be difficult to exaggerate the im[illegible] of this discovery. But perhaps the most striking ins[illegible] that of the application of sero-therapy to diphtheri[illegible] has only to study the figures both in London and in [illegible] be assured of the fact that since the introduction [illegible] toxin the mortality through this terrible disease h[illegible] enormously reduced. Again, as a direct result of the [illegible] mental method, Malta fever has been extinguishe[illegible] naval and military hospitals, Sir David Bruce repo[illegible] almost empty, and the island has become the healthiest of garrisons. Formerly, this severe and dangerous disease accounted annually for 75,000 days of illness. The researches of two eminent American physiologists, Dr. Simon Flexner and Dr. J. A. Jobling, have enabled the mortality from that terrible complaint, cerebro-spinal meningitis, to be reduced by more than 50 per cent. Do not these striking results speak for themselves?" Lord Cromer concluded by referring to the cancer problem, with regard to which bacteriologists were constantly being taunted because they had not yet discovered a cure; and in this connexion he quoted Dr. James Ewing, professor of pathology at the Cornell University Medical College, who said on this subject: "What is the reason why medical science has always branded this field as a barren territory? It is because the method of study by means of animal experimentation was not thought applicable to the subject of cancer. Diphtheria has been cured, because we can reproduce the disease in animals, study its progress under controllable conditions, and test for its cure the antitoxic agents prepared according to the accepted theories of the laboratory. None of these methods was thought applicable to cancer." Professor Ehrlich, the leader of German cancer research, had said that the beginning of [illegible] Ewing [illegible] accordi[illegible] mental method in medical and biological research. "It is to my mind," said Lord Cromer, "almost inconceivable that any body of thinking men and women can hesitate for one moment to sacrifice the lives of a certain number of mice, rabbits, and rats if the least chance exists of eventually finding a remedy for this terrible scourge—a scourge, be it remembered, which not only causes death, the lot of all, but kills the victim under conditions of pain infinitely greater than that inflicted by any experimentalist in his laboratory."

The report of the committee for the year 1908–09, which was read by Mr. STEPHEN PAGET, was as follows:—

Your committee are glad to be able to report that the society has [illegible]

[illegible] course of formation.

In the United States, the work of our society has been followed with [illegible]

[illegible] very favourably [illegible] has been circu[illegible] of the society have attended many debates in London and elsewhere, and the [illegible] ts have also [illegible] ectures have [illegible] lides, by Dr [illegible], Dr. Duke [illegible] such titles as [illegible] of Fighting [illegible]" have been [illegible] ollege, King [illegible] en, London [illegible] Royal Naval Academy, Bognor, Ilford, Chelmsford, Bournemouth, [illegible] ewhere. Several of these lectures [illegible]

[illegible] their life to methods discovered by the help of experiments on animals may be glad to be thus associated with the Research Defence Society. [illegible] com- [illegible] to the [illegible] issue [illegible] great [illegible] delay [illegible] public mind.

Dr. F. M. SANDWITH having read the financial statement and announced the first legacy to the society—namely, a gift of £1000 bequeathed by the late Dr. John Hall—

Sir JAMES DEWAR moved the adoption of the report. He lamented the lack of interest which was taken by the public in the borderland between physiology and chemistry. He instanced the coal tar industry and said that this country little understood what Germany was doing to stimulate the investigation of new chemical products. Each factory had its own laboratory as thoroughly equipped as any English or Scotch University. German firms knew quite well that research of the kind to which he referred, however expensive in the initial outlay, would eventually repay them a hundredfold. The large number of chemical and physiological substances which had thus been produced were of the most serious import to medical knowledge at large as well as to the art of dispensing. The properties of these products had to be examined physiologically as well as chemically, and on these products much of our future well-being might depend. Experimentation upon animals had become an absolute necessity for the future extension of such knowledge. There was no other method of attaining that knowledge. If we were forced to this conclusion it was not because we were unable to sympathise with pain but because of the calls of inevitable duty. He noticed from the annual report of experiments on animals that only 6 per cent of the experiments were made in regard to enzymes and drugs. The percentage of such experiments made in another country would be found to be far larger. He concluded with an earnest plea for greater stimulation of inquiry into the physiological properties of chemical bodies, adding that experimentation on animals must go on in order to obtain knowledge which could not be obtained in any other way.

Sir A. CONAN DOYLE seconded the adoption of the report. He said that it was not science but only common sense that was required to decide whether experiments should be made, and the question whether human beings or animals should be selected for experiment carried with it its own answer. He referred to a lurid picture exhibited at some railway stations, and said that if he possessed the original block from which the picture was made he would leave in all the present details but would have depicted in addition on one side of the picture a poor mother leaning over her child who was dying from diphtheria or some other preventable disease. Under the picture he would put, "Which is it to be?" He might also add these three questions: 1. Which should perish—the lower or the higher organism? 2. Which is better—that one should die, or that tens of thousands should find a mode of life? 3. Which is better—that one should perish painlessly under chloroform or that many should die in the agonies of long-drawn-out disease?

The report was then unanimously adopted.

The Hon. WALTER GUINNESS, M.P., in moving a vote of thanks to the chairman, pointed out the valuable work which the society could do in forestalling the attacks of its opponents, and remarked that Lord Cromer was a most valuable asset to the society not only on account of his great prestige but also on account of the personal interest which he took in the work of the society.

Professor STARLING seconded the motion and the vote was heartily accorded.

The CHAIRMAN then briefly replied and the meeting terminated.

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[1] The exact number on the day of the meeting was 2560 members and 61 associates, making a total of 2621, of whom 374 are ladies.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 2nd, 1831.

CASE OF HAY FEVER.

To the Editor of THE LANCET.

SIR,—Having noticed in your valuable Journal, some remarks by Dr. Elliotson on *hay-fever*,[1] I beg you to accept the account, or as much of it as I remember, of a case which came under my observation some three or four years ago, during my apprenticeship at Paris. A gentleman called, stating he wished to see my master, as he was suffering from a severe attack of the hay-fever. The term was quite new to my ears, and I thought it must either be the result of fancy or the mistaken name of a complaint. When my master saw him, he found symptoms much resembling slight spasmodic asthma, with tolerably easy expectoration, and a great deal of nervous irritability of the system, the patient appearing to be rather a hypochondriacal subject. He stated that he generally had an attack once a year, about the hay-making season, which lasted a fortnight or three weeks, and that the last seizure occurred suddenly whilst he was travelling from Italy. There was no grass to be seen about the immediate spot, but on proceeding a mile farther he found some people mowing, to which circumstance he immediately attributed the attack. He said that he was always better in a neighbourhood where there was little grass, and never had an attack in the winter. During his passage through Normandy, where the land is chiefly meadow, he had been a dreadful sufferer. The medicine prescribed was infusion of valerian, to which, I believe, a little tr. sennæ was added. He was relieved by this, and continuing to mend on the medicine, at the end of a week stated himself to be quite well. If Dr. Elliotson can glean any instruction from this case, I beg to say he is most welcome to it. I am, Sir, your obedient servant,

AUGUSTUS PRATER.

THE ROYAL SOCIETY CONVERSAZIONE.

THE second conversazione of the Royal Society, to which ladies are admitted, was held in the society's rooms in Burlington House, on Thursday, June 24th, when Sir Archibald Geikie, K.C.B., D.C.L., the President, received a very large number of distinguished Fellows and visitors. The exhibits were again of an interesting character though smaller in number, while certain of them were shown at the previous conversazione held on May 12th. Dr. A. D. Waller, for instance, repeated his demonstration of the electrical variation of the human heart and of the dog's heart on Einthoven's string galvanometer. Professor Norman Collie showed also again the peculiar glow which appears when neon is shaken with mercury, and Professor Sylvanus P. Thompson repeated his experiments illustrating the work done by rubber bands when heated, the contraction being sufficient in some cases to raise a pound weight.

Amongst the other exhibits, mention may be made of Dr. W. N. Shaw's interesting observations by means of experimental balloons of the temperatures and pressures in the atmosphere up to a height of 15 miles. Messrs. Zeiss carried out a very beautiful experiment, in which they projected on the screen by means of a lantern and microscope the images of liquid crystals and of solid crystals formed from them. The most interesting example, perhaps, was that given by cholesterin acetate. Dr. F. W. Edridge-Green showed his spectroscope for estimating colour perception, by which the exact size of portions of the spectrum which appear monochromatic can be ascertained, and their varying size with different persons. A remarkably fine series of photographs of clouds and landscapes taken from a balloon was exhibited by Dr. W. J. S. Lockyer. Professor George H. F. Nuttall and Dr. Seymour Hadwen illustrated in a series of microscope slides the discovery of a curative treatment for malignant jaundice in the dog and for redwater in cattle. The effects of "trypanblau" upon the parasites were shown. It is stated that the results of treatment are so striking that field experiments promise to meet with success, and the observations made upon the parasites in animals undergoing treatment have thrown further light upon their biology. Mr. F. Enock showed some curious living stick insects. When mature these insects attain a length of over four inches and become of a brown colour which harmonises with the brown twig on which they rest. On emerging from the egg they are half an inch in length and quickly stretch themselves along a green twig which they exactly resemble.

There were no lantern demonstrations given in the lecture room, which hitherto have formed an attractive feature of the conversazione on "ladies' night," but the floral decorations on the ground floor and staircases were most lavish and beautiful.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

THE annual general meeting of this society was held at 31, Craven-street, Strand, London, on June 23rd, with Dr. G. A. HERON in the chair. In moving the adoption of the report, which was unanimously agreed to, the Chairman pointed out that the balance to the credit of the society amounted to £3917 and that the total resources of the society on Dec. 31st, 1908, were represented by a sum of £10,613. Taking the cash assets of the society into consideration he calculated it would be possible to pay at very short notice 17*s.* 1*d.* per head of the membership of the society. The Chairman and Council were accorded a vote of thanks for their services, which was passed with acclamation.

The annual report of the Council of the society for 1908 takes the form of a closely printed pamphlet of 84 pages and contains much that is of importance to members of the medical profession, especially in regard to matters referring to libel and slander, negligence or unskilfulness, notification of infectious diseases and births, and professional fees. A special committee of the society on the working of the Midwives Act sent in a report which is included in the annual report of the Council, recommending :—

> That it should be clearly understood that no medical man should be expected to attend on the summons of a midwife unless he chose to undertake such work at the fees guaranteed by the guardians, or others.
>
> That the fees of medical men summoned by midwives should be paid to them in all cases without requiring from them any proof of the poverty of the patients, any necessary inquiry being made by the board of guardians or others, who should pay the fees of the medical practitioners without demur, and then take such steps as they might think fit to recover the fees when the patients were able to pay them.
>
> That when a medical man is summoned by a midwife to operate or attend on a woman in a serious emergency, he should be the judge as to whether or not he should visit the patient again, and, if so, how often, and that for these visits the doctor should be entitled to the usual fees in addition to the fee for the operation or attendance.

A charge of unprofessional conduct against a medical man is particularly difficult to deal with, and the following example of such a case is interesting and instructive. A member of the society was called to see a patient staying at a hotel who was suffering from slight hæmorrhage after tooth extraction. She would not let the medical man take his own course to stop the bleeding, and after wasting about an hour there he did what he could but told the patient he would not come again to attend her. Subsequently, however, the medical man received very urgent appeals from a male friend of the patient, and at last consented to attend on the representation that the patient's life was in danger. When he sent in his account he received a letter from the patient saying that she considered his account not due, inasmuch as he unskilfully and ineffectually attended to her and refused to call when she instructed him to come. If he persisted in his claim she said she would place the matter in the hands of her solicitor. She had, she said, been advised to submit the whole matter to the Council of the Royal College of Surgeons and abide by its decision in the matter. This letter was answered on the member's behalf and no more was heard of the suggestion of unprofessional conduct. Some of the most awkward instances in which advice was sought by members of the society are recorded in the annual report under the heading of professional secrecy, and are naturally connected with questions of pregnancy and venereal disease. The issue of the cases abundantly proves the value to its members of the society.

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[1] In THE LANCET of June 18th, 1831, a clinical lecture by Dr. Elliotson was reported. In the course of the lecture Dr. Elliotson requested his audience to give or procure him any information respecting "a very extraordinary affection that I have once only had occasion to treat." "It is what is called *hay-fever or hay asthma.*" "The first time I ever heard of this disease was seven or eight years ago." "If the disease really prevails more now than formerly, and we observe it so frequently now not merely because its existence is notorious, this might perhaps be ascribed to the large number of new grasses which have of late years been introduced."

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts, additional to those already announced in THE LANCET, received at the Mansion House or notified directly to us as having been collected on behalf of the Metropolitan Hospital Sunday Fund up to Monday, when the sum paid in was about £28,000:—

	£	s.	d.
[illegible]	440	0	0
[illegible]	410	0	0
[illegible]	281	0	0
[illegible]	278	0	0
[illegible]	265	0	0
[illegible]	255	0	0
[illegible]	250	0	0
[illegible]	210	0	0
[illegible]	206	0	0
[illegible]	191	0	0
[illegible]	178	0	0
[illegible]	175	0	0
[illegible]	161	0	0
[illegible]ion	142	0	0
[illegible]	127	0	0
[illegible]	115	0	0
[illegible]	112	0	0
[illegible]	101	0	0
[illegible]	97	0	0
[illegible]	93	0	0
[illegible]	92	0	0
[illegible]	87	0	0
[illegible]	85	0	0
[illegible]	84	0	0
[illegible]	81	0	0
[illegible]	79	0	0
[illegible]	76	0	0
[illegible]	75	0	0
[illegible]	73	0	0
[illegible]	70	0	0
[illegible]	68	0	0
[illegible]	66	0	0
[illegible]	62	0	0
[illegible]	61	0	0
[illegible]	60	0	0
[illegible]	60	0	0
[illegible]	60	0	0
[illegible]	59	0	0
[illegible]	58	0	0
[illegible]	58	0	0
[illegible]	58	0	0
[illegible]	56	0	0
Lemsford Parish Church	56	0	0
[illegible]	54	0	0
[illegible]	53	0	0
[illegible]	52	0	0
[illegible]	49	0	0
[illegible]	49	0	0
[illegible]	48	0	0
[illegible]	48	0	0
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[illegible]	42	0	0
[illegible]	41	0	0
[illegible]	40	0	0
[illegible]	40	0	0
[illegible]	39	0	0
[illegible]	38	0	0
[illegible]	38	0	0
[illegible]	37	0	0
[illegible]	37	0	0
[illegible]	35	0	0
[illegible]	35	0	0
[illegible]	35	0	0
Potters Bar Churches	35	0	0
St. Mary's, West Kensington	35	0	0
St. Mary Magdalen's, Wandsworth Common	34	0	0
St. Mary's, Balham	34	0	0
Orpington Churches	33	0	0
[illegible]	33	0	0
[illegible]	32	0	0
[illegible]	32	0	0
[illegible]	32	0	0
[illegible]	31	0	0
[illegible]	31	0	0
[illegible]	31	0	0
[illegible]	31	0	0
[illegible]	31	0	0

MEDICINE AND THE LAW.

Destruction of Infected Articles by Medical Officer.

THE case of Farrell *v.* Longford urban district council, which came recently before Lord Justice Holmes in Ireland, raised an interesting point as to the destruction of infected property by a medical officer of health. It was an appeal from a decision of his honour Judge Curran, K.C., for £20 damages in an action by Mrs. Sarah Farrell against the Longford urban district council for trespass and for burning and destroying clothing, furniture, bedding, and household effects, the property of the plaintiff. Neither the Infectious Disease (Notification) Act, 1899, nor the Infectious Disease (Prevention) Act had been adopted. The plaintiff kept a lodging house, and in April, 1908, a woman who lodged in the house became ill and was pronounced by Mr. N. Mayne, who attended her, to be suffering from cerebro-spinal meningitis. Mr. Mayne sent to Dr. M'Cann, the medical officer of health of the district, a certificate to the effect that the woman was suffering from that disease, and Dr. M'Cann, considering the matter to be of extreme urgency, without notifying either the executive sanitary officer or the sanitary authority, ordered the immediate disinfection of the house and the removal and destruction of all the furniture, clothing, and other articles therein, which order was carried out by the sub-sanitary officer. It subsequently transpired that the case was not one of cerebro-spinal meningitis or other infectious disease. The plaintiff having claimed a sum of £72 for compensation, the defendants denied liability on the ground that the acts complained of were not done by their authority or with their knowledge and approval. The sub-sanitary officer valued the clothing destroyed at £20 6*s.*, and the county court judge gave a decree for £20. From this decision the defendants appealed. Section 137 of the Public Health (Ireland) Act, 1878, provides for the disinfecting of premises by a sanitary authority on the certification of their sanitary officer or other legally qualified medical practitioner. Section 138 provides that the sanitary authority may direct the destruction of bedding, clothing, or other articles and give compensation for the same. It is the sanitary authority and not the medical officer of health who must order the destruction of articles. Section 274 provides that any dispute as to the fact of damage or amount of compensation shall be settled by arbitration in manner provided by the Act, or if the compensation claimed does not exceed the sum of £20 the same may, at the option of either party, be ascertained by and recovered before a court of summary jurisdiction. Lord Justice Holmes in the course of his judgment said: "There are two points in this case. I am disposed to think that there could not be a full delegation of authority to the medical officer, giving him absolute discretion. If that were done it would be a violation of the statute, because the urban district council are an elected body with statutory powers. On the other hand, in a [illegible]ise of authority by the [illegible]itary authority and [illegible]om what the counsel [illegible]hat I might, if I had [illegible] have come to the conclusion that in this case the sanitary authority did adopt the action of the medical officer. But the other point is, that there is a particular method of ascertaining the damages pointed out by the statute, and, as far as I am aware, that procedure is always adopted throughout the country. That method is not litigation, but arbitration, except in cases where a small amount is claimed, when proceedings may be taken before county summary jurisdiction. I do not know if there is any limit of time, but the plaintiff may still be able to proceed by arbitration. I do not, however, decide that question. I therefore reverse the decree and dismiss the action with costs. I think the sanitary authority might very well not levy the costs."

Conviction of an Abortionist.

William Arthur Jones, William John Lidstone, and Caroline Farmer were tried and convicted at the recent sessions at the Central Criminal Court, the first-named for performing an illegal operation upon Beatrice Dean, and the other two for aiding and abetting him. Dean, employed by Lidstone as a domestic servant, was taken by him to Farmer when he found that she was with child, and by Farmer was introduced to Jones, who, under the title of "Dr." Jones, apparently was well known in Walworth. The confessic Dean to the police enabled proceedings to be taken, and Jones being convicted evidence was given that he had once been upon the Medical Register, but had been removed in 1902 after a conviction for a similar offence. There were other indictments against him, but these were not proceeded with, and Mr. Justice Jelf, after observing that Jones was a man whom it was desirable to get rid of for a long time, passed upon him a sentence of ten years' penal servitude. Lidstone, who received a good character from the police, was sentenced to three months' imprisonment in the second division, and Farmer, described as a respectable married woman, was bound over to come up for judgment if called upon to do so.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7520 births and 3801 deaths were registered during the week ending June 26th. The annual rate of mortality in these towns, which had not exceeded 12·6 and 12·3 per 1000 in the two preceding weeks, further declined to 12·1 in the week under notice, and was lower than the rate recorded in any previous week of this year. During the first twelve weeks of the current quarter the death-rate in these towns averaged 14·2 per 1000; the mean rate in London during the same period did not exceed 13·7. The lowest recorded annual death-rates in these towns last week were 4·9 in Ipswich, 5·2 in Willesden, and 5 6 in East Ham and in Devonport; the rates in the other towns ranged upwards, however, to 17·3 in Middlesbrough, 18·6 in South Shields, 19·5 in Great Yarmouth, and 19·6 in Oldham. In London the recorded death-rate last week did not exceed 12·1 per 1000. The 3801 deaths from all causes in the 76 towns last week showed a further decline of 79 from the decreasing numbers in recent weeks, and included 352 which were referred to the principal epidemic diseases, against 393 and 364 in the two previous weeks; of these 352 deaths, 159 resulted from measles, 63 from whooping-cough, 57 from diarrhœa, 34 from diphtheria, 28 from scarlet fever, and 11 from "fever" (principally enteric), but not one from small-pox. The 352 deaths from these epidemic diseases last week were equal to an annual rate of 1·1 per 1000, against 1·2 in each of the two preceding weeks. No death from any of these epidemic diseases was registered last week in Leicester, Croydon, Oldham, Tottenham, Halifax, or in seven other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·4 in Norwich, 3·9 in Stockton, 4·5 in Salford and in Bootle, and 5·5 in Wolverhampton. The fatal cases of measles in the 76 towns, which had been 186 and 173 in the two preceding weeks, further declined to 159 last week; the fatal cases of this disease caused annual death-rates last week ranging upwards to 2·9 in Stockton-on-Tees, 3·0 in Salford, 3·4 in Norwich, and 5·0 in Wolverhampton. The 63 deaths from whooping-cough showed a further slight increase upon the numbers returned in the two previous weeks, and caused an annual rate equal to 1·5 per 1000 in Middlesbrough. The 57 deaths attributed to diarrhœa exceeded the number in any recent week; the deaths from this cause were proportionately most numerous in Portsmouth and Bootle. The 34 fatal cases of diphtheria exceeded the number in the previous week by six and included five in Manchester and Salford, three in Portsmouth, and two in Hull. The 28 deaths from scarlet fever showed a decline of 27 from the number in the previous week, but included nine in London and its suburban districts and four in Manchester and Salford. Only 11 deaths from "fever" were registered last week in the 76 towns, against 13 and 16 in the two previous weeks. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 2228, 2263, and 2445 at the end of the three preceding weeks, had further increased to 2517 on Saturday last; 368 new cases of this disease were admitted to these hospitals during last week, against 305 and 468 in the two preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had steadily declined in the four preceding weeks from 225 to 135, rose again to 155 in the week under notice, and exceeded by 13 the corrected average number in the [illegible] week of the five years 1904–08. The 13 [illegible]ndon directly referred to influenza last week exceeded the number in the previous week by seven. Th causes of 43, or 1·1 per cent., of the deaths registered las week in the 76 towns were not certified either by a regis tered medical practitioner or by a coroner. The causes o all the deaths registered during the week were again dul certified in Leeds, Bristol, West Ham, Bradford, Newcastle on-Tyne, Salford, and in 51 other smaller towns; the 4 uncertified causes of death in the 76 towns included 13 i Liverpool and three each in Birmingham, Gateshead, Sout Shields, and Handsworth.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 926 births and 45 deaths were registered during the week ending June 26th The annual rate of mortality in these towns, whic had been equal to 16·3, 14·5, and 15·5 in the three pre ceding weeks, declined to 12·7 in the week under notice During the first twelve weeks of the current quarter th death-rate in these Scotch towns averaged 16·2 per 100 while in the 76 large English towns the mean death-rat during the same period did not exceed 14·2. The death-rate last week in these Scotch towns ranged from 8·5 and 10· in Perth and Aberdeen, to 18·3 in Leith and 19·7 i Dundee. The 454 deaths from all causes in the eigh towns showed a decrease of 100 from the number returne in the previous week, and included 54 which were re ferred to the principal epidemic diseases, against 55 an 56 in the two previous weeks. These 54 deaths were equa to an annual rate of 1·5 per 1000, scarcely differing fro the rates in recent weeks; the mean death-rate last wee from these principal epidemic diseases in the 76 large Englis towns did not exceed 1·1 per 1000. Of the 54 death from these epidemic diseases in the Scotch towns, 1 resulted from diarrhœa, 17 from whooping-cough, eigh from measles, six from diphtheria, and five from "fever, but not one either from scarlet fever or small-pox. Th 18 deaths attributed to diarrhœa in the eight towns exceede the number in any recent week, and included nine in Glasgow three in Dundee, and two in Edinburgh. The fatal cases o whooping-cough, which had declined in the four precedin weeks from 40 to 18, further fell last week to 17, of which eigh occurred in Glasgow, five in Edinburgh, and four in Aber deen. The eight deaths from measles showed a decline o five from the number in the previous week, and include four in Paisley, against 10 in the preceding week. Th six fatal cases of diphtheria, of which two occurred i Aberdeen, exceeded the number in the previous week by tw Five deaths in the eight towns were referred to "fever, of which two certified as tpphus occurred in Dundee, on each of cerebro-spinal meningitis in Edinburgh an Aberdeen, and one of enteric in Glasgow. The deaths referre to diseases of the respiratory organs in the eight town which had steadily declined in the five preceding week from 109 to 73, further fell to 64 last week, and wer three below the number in the corresponding week of la year. Of the deaths in the eight towns last week, 1 resulted from violence, including six in Glasgow and thre in Edinburgh. The causes of eight, or 1·8 per cent., o the deaths in the eight towns last week were uncertified in the 76 English towns the proportion of uncertifie causes of death last week did not exceed 1·1 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had bee equal to 18·7 and 15·7 per 1000 in the two precedin weeks, rose again to 19·6 in the week ending June 26t During the first 12 weeks of the current quarter the deat rate in the city averaged 21·1 per 1000, whereas th mean rate during the same period did not exceed 13· in London and 15·9 in Edinburgh. The 150 deaths o Dublin residents from all causes registered last week showe an increase of 20 upon the low number in the previous week and included eight which were referred to the principa epidemic diseases, against nine and ten in the two precedin weeks. These eight deaths were equal to an annual rate o 1·0 per 1000, the death-rate from these epidemic disease in the same week being 1·1 in London and 1·5 i

Edinburgh. Of the eight deaths from these epidemic diseases in Dublin last week, five resulted from whooping-cough and three from diarrhœa, but not one either from measles, scarlet fever, diphtheria, "fever," or small-pox. The fatal cases of whooping-cough showed an increase. The 150 deaths at all ages included 31 of infants under one year of age and 33 of persons aged upwards of 60 years; the deaths of infants considerably exceeded the numbers in recent weeks. Six inquest cases and three deaths from violence were registered during the week; and 62, or 41·3 per cent., of the deaths occurred in public institutions. The causes of two, or 1·3 per cent., of the deaths in the city last week were uncertified either by a registered medical practitioner or by a coroner; in London the causes of all but one of the 1125 deaths last week were duly certified, as were all but one of the 81 deaths in Edinburgh.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. I. D. Hackett, Administrative Medical Officer at Bordon, and Lieutenant-Colonel C. R. Tyrrell, Staff Officer to the Principal Medical Officer, Eastern Command, exchange places on the foreign service roster.

ROYAL ARMY MEDICAL CORPS SCHOOL OF INSTRUCTION.

Major Charles C. Fleming, D.S.O., R.A.M.C., to be Instructor, vice Major J. D. Ferguson, D.S.O. (dated June 13th, 1909).

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned has been appointed Surgeon: Albert James Gilbertson (dated June 24th, 1909).

TERRITORIAL FORCE.

Infantry Battalions.

5th Battalion Loyal North Lancashire Regiment: Surgeon-Captain Henry J. Taylor, from the 2nd Volunteer Battalion, The Loyal North Lancashire Regiment, to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

Royal Army Medical Corps.

2nd London (City of London) Field Ambulance: Reginald Ernest Bickerton to be Lieutenant (dated April 13th, 1909).

3rd London (City of London) Field Ambulance: Captain Hubert C. Phillips resigns his commission (dated May 8th, 1909). Bernard Elwell Potter to be Lieutenant (dated May 12th, 1909).

6th London Field Ambulance: Edward Pigott Minett to be Lieutenant (dated May 18th, 1909).

2nd North Midland Field Ambulance: Albert John Riddett to be Lieutenant (dated April 29th, 1909).

3rd North Midland Field Ambulance: George James Smith Atkinson to be Lieutenant (dated March 8th, 1909).

2nd South Midland Field Ambulance: Samuel George Webb to be Lieutenant (dated May 19th, 1909).

2nd Northumbrian Field Ambulance: George Reginald Ellis to be Lieutenant (dated May 1st, 1909). The undermentioned officers to be Captains (dated May 8th, 1909): Lieutenant Henry C. Pearson and Lieutenant Duncan A. Cameron.

3rd West Riding Field Ambulance: Lieutenant James Mackinnon, from the 1st West Riding Field Ambulance, to be Lieutenant (dated April 26th, 1909).

1st Northern General Hospital: To be Major whose services will be available on mobilisation: Robert Alfred Bolam (late Lieutenant, 9th Battalion, The Durham Light Infantry), with seniority next below Major W. G. Richardson (dated March 30th, 1909).

Sanitary Service: To be Captain whose services will be available on mobilisation: William Butler (dated June 5th, 1909).

1st South Midland Mounted Brigade Field Ambulance: Donald Buchanan to be Lieutenant (dated May 8th, 1909).

1st Home Counties Field Ambulance: George Potts to be Lieutenant (dated Feb. 11th, 1909).

1st South Midland Field Ambulance: Major Arthur R. Badger resigns his commission (dated June 4th, 1909).

5th Southern General Hospital: The undermentioned to be officers whose services will be available on mobilisation (dated July 21st, 1908):—To be Lieutenant-Colonels: Claude Clarke Claremont, Charles Plumley Childe, Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel George Gordon Sparrow (late 2nd Hampshire Royal Garrison Artillery (Volunteers)), Retired List; Harry Wynter Shettle. To be Majors: John Robert Stevenson Robertson (late Surgeon; Army Medical Department), Arthur Vernon Ford, John Phillips, John Rushworth Keele, Norman Elliott Aldridge, Charles Frederic Routh, William Prior Purvis, and Howard Percy Ward. To be Captains: Thomas Arthur Munro Forde, Samuel Goss, George Hebb Cowen, William Patrick McEldowney, Charles Archibald Scott Ridout, John Temple Leon, Harold Burrows, John Henry Pearson Fraser, John Lister Wright, Edward James Davis Taylor, Thomas Holmes, John William Gregory Kealy, Samuel Hughes, Charles Howard Saunders, William Patrick O'Meara, Rolland Atkinson Dove, Alfred William Power, John Tiley Montgomery McDougall (late Surgeon, Royal Navy), Charles Lamplough, and Montague Harold Way.

For Attachment to Units other than Medical Units.—Surgeon-Major William B. Mackay, from the 7th Battalion, The Northumberland Fusiliers, to be Major, with seniority as from August 1st, 1903 (dated April 1st, 1908). Surgeon-Captain Philip John Le Riche, from the 2nd Volunteer Battalion, The Royal Sussex Regiment, to be Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

Attached to Units other than Medical Units.—Lieutenant James A. Gibson resigns his commission (dated April 12th, 1909). Captain Richard J. Swan resigns his commission (dated May 3rd, 1909). Lieutenant John E. Simpson to be Captain (dated May 11th, 1909).

THE BIRTHDAY HONOURS.

The list of Birthday Honours includes the names of Lieutenant-Colonel W. B. Leishman, R.A.M.C., who has received a knig[illegible] I.M.S., [illegible] Commar[illegible] Whitehe[illegible] Colonel de Burgh Birch, A.M.O., West Riding Division, Territorial Force, who receive Companionships of the Bath; and of Lieutenant-Colonel Robert Neil Campbell, I.M.S., Officiating Inspector-General of Civil Hospitals in Eastern Bengal and Assam, who receives a Companionship of the Order of the Indian Empire. The *London Gazette* of *June 25th contains the announcement of the appointment of* Colonel Charles Edward Harrison, honorary surgeon to His Majesty, Brigade-Surgeon-Lieutenant-Colonel, Grenadier Guards, as a Commander of the Royal Victorian Order.

Correspondence.

"Audi alteram partem."

MALARIA PREVENTION AT MIAN MIR.

To the Editor of THE LANCET.

SIR,—I see by your issue of June 26th that Major S. P. James, I.M.S., and Captain S. R. Christophers, I.M.S., have not "undertaken the trivial task of replying in detail to each of the criticisms brought forward by Professor Ross," but endeavour to escape from Mian Mir in a cloud of generalities about malaria in India. Permit me to pin them to the point, which is this: whether Major James's recent statements at the Bombay Medical Congress regarding the failure of the operations at that station are true or not true. On a previous occasion these gentlemen neglected the same "trivial task of replying" to the criticisms of Colonel G. M. Giles, Captain E. P. Sewell, and myself on the same subject, and now I see that they repeat all their own inaccuracies about Mian Mir witho[illegible] the complete refutations [illegible] H. Hamilton and Colonels [illegible] D. Rowan, and J. Shearer. [illegible] take this trivial task I feel justified in saying that the whole of their original work at Mian Mir was badly conceived and badly executed, and that it showed little evidence either of knowledge of practical malaria prevention, or even of a genuine intention to obtain success.

With regard to Major James's paper at the congress, the criticisms of the five administrative medical officers mentioned above can, I think, be put in the form of the following series of questions: 1. Is it not true that, owing to exceptional rains, Mian Mir was flooded for weeks last August, and that an epidemic of malaria was raging in the surrounding country? 2. Why exactly did Major James visit the station, after long absence, a few weeks after the floods, at the precise moment when the mosquitoes and the malaria were sure to be exceptionally prevalent in spite of the admittedly partial measures which had been taken against them? 3. Why, in his paper, did he omit to make any reference either to the floods or to the epidemic? 4. Why did he call the station an "arid desert" when it contains many wells and even irrigated gardens? 5. Why did he say that it had been reduced to the "verge of bankruptcy" by the anti-malarial measures, when these had really formed only a small part of the local expenditure? 6. Why in his statistics did he take only a group of years which show, apparently, the worst results? 7. Why did he vitiate them still further by including the statistics of Fort Lahore, which was the unhealthiest spot in the neighbourhood and was not included in the anti-malarial operations? 8. Why did he not state how many of the children found infected by him had only recently come to the station? 9. How does he explain finding infection in the enormous proportion of seven out of ten men of the Gloucester Regiment, taken "more or less at random," when, as Colonel Forman has ascertained, the regiment did not really suffer much? 10. How does he explain the discrepancy between his statements and those of Colonel Rowan, the principal medical officer?[1] 11. Why did he say that the success of mosquito-destruction operations elsewhere (Ismailia) had been "reported on evidence that will not bear criticism and is often ridiculous," without explaining his reasons and without inspecting the place (which is *en route* to India)? 12. Why has he not replied before to these criticisms?

The bulk of the letter by Major James and Captain Christophers consists merely of an abstract discussion, possessing neither depth nor novelty, of the old, old theme of quinine *versus* mosquito reduction. After all, the world judges by results. While, on the one hand, brilliant practical successes have been won by those who have loyally followed the new ideas; on the other hand, Major James and Captain Christophers have nothing to show but a series of philosophical reflexions—and a failure. Yet no men during the last ten years have had greater opportunities.

The position has been well put by Colonel Rowan, who writes: "Should Major James have any suggestions to offer (regarding Mian Mir) that are likely to be more effective than the anti-malaria measures already adopted, they will be most welcome, but it appears to me that he incurs a grave responsibility by attempting to discredit methods which have already, both in Mian Mir and elsewhere, been followed by a large measure of success."[2] I have not heard that Major James has made the required suggestions.

In the meantime, I keep the authors to their statements about Mian Mir. That is the centre of their position—though I perceive they are already endeavouring to make a strategic movement away from it. The Mian Mir bogey has been used long enough to terrorise malaria prevention throughout India—and elsewhere. It must now verify itself or vanish. Frankly, I do not think that Major James can substantiate his statements made at the Bombay Medical Congress. At any rate, until he attempts to do so, I propose to postpone the trifling task of discussing his more general, but, I think, equally fallacious, conclusions.

I am, Sir, yours faithfully,

University of Liverpool, June 28th, 1909. RONALD ROSS.

PS.—Those who wish to compare theory with practice should read the address by Colonel Gorgas in the Journal of the American Medical Association for June 19th, 1909.

To the Editor of THE LANCET.

SIR,—I was present at the Bombay Medical Congress in February, and heard the attack by Major James and Captain Christophers on Professor Ross's methods of malarial prophylaxis as illustrated by the "failure" in Mian Mir, together with the subsequent discussion. That I was startled goes without saying, for my experience—no small one—had convinced me that Ross was right and that the problem which confronted us was not what we had to do and how to do it, but how we could succeed in awakening apathetic authority and induce it to provide the wherewithal to combat a disease which, from both the humanitarian and economic points of view, was of enormous importance. In days gone by I knew Mian Mir and I had watched with considerable interest the progress of the anti-malarial measures in that insalubrious cantonment from their inception down to the present time. Immediately after hearing Major James's paper I made careful inquiry from competent men on the spot, amongst them Lieutenant-Colonel H. D. Rowan, R.A.M.C., who for three and a half years (including 1908) was senior medical officer at Mian Mir; and I also made a comparative analysis of the incidence of malaria in other stations (e.g., Bombay) for the year 1908, which was an exceptionally bad year for malaria all over India, so much so, indeed, that at Cawnpore and elsewhere the railway companies were well-nigh crippled for want of *personnel*. I have been travelling much since then, both by land and sea, and it is only now that I have seen the further attack on Ross in your issue of April 3rd. Hence this belated communication. Your special correspondent in that article says: "In this opinion (i.e., the failure of Ross's methods in Mian Mir) Major James *feels sure* that he will be supported by medical officers at Mian Mir who were able to observe the terrible havoc, &c." Does he? Then all I can say is, that Major James in this, as in other respects, has jumped at an unwarrantable conclusion. Far from this being so, these medical officers without exception dissent emphatically, and no one more so than Lieutenant-Colonel Rowan, an officer of wide experience and one who knows far more about Mian Mir than Major James or any other man, and who, moreover, has made a special study of malarial incidence in that cantonment.[1] In a communication before me Rowan says:—

> I have no hesitation in saying that James's statistics are unfairly adverse to Mian Mir and cannot be relied upon, and this for the following reasons: 1. They are admittedly very different from the returns rendered by the hospital. 2. They cover only a period of five years. 3. They include Fort Lahore. 4. Figures for 1908 are for 11 months only. 5. In 1908 the epidemic of malaria throughout the Punjaub was of exceptional severity.

Permit me very briefly to comment on these points. If Major James relies upon statistics at all—and he does—surely it would be more in accord with the fitness of things if he adopted the carefully compiled official figures and not some hypothetical data evolved from his own inner consciousness, and based on a few scattered personal observations extending over a few days during a flying visit to Mian Mir? The anti-malarial measures were begun in 1904–05, and "it is, therefore, ludicrously unfair to attempt to demonstrate the effect of these measures by comparing the figures of 1908 with those of 1904 and the intervening years" (Rowan). Obviously the comparison should have been made with the quinquennium, 1899–03.

Fort Lahore is one of the most pestilential spots in India; it is some four miles from Mian Mir, and in 1908, for the first time, its vital statistics were, by order, included in those of Mian Mir. The figures for the two places 1903–07, average admissions per 1000 malaria and simple continued fever, were: Mian Mir, 544; Fort Lahore, 891. Yet Major James asserts that the inclusion of the latter favours the former. He strikes an average for December, 1908, on the previous 11 months, ignoring the fact that this month is one of the healthiest in the year. Clearly this is fallacious. If malaria was epidemic everywhere surely it is unreasonable to expect that Mian Mir should wholly escape?

As I have said, the anti-malarial measures were begun actively in 1904, and I may add that they were admittedly limited and partial, nor did the Government give a rupee towards them; every penny had to be found from the funds of a semi-bankrupt cantonment. Yet here are the results, the figures being admission *ratios* per 1000 of strength British troops: 1878–82, 1960; 1883–87, 1524; 1888–92, 1088; 1893–97, 981; 1898–1902, 925; 1903, 1030; 1904, 587; 1905, 425; 1906, 490; 1907, 177; 1908, 537, malaria only (includes Fort Lahore).

Is further comment necessary? Hardly. I personally have not the smallest hesitation in saying that if the Government will give the cantonment of Mian Mir £1000 per annum

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[1] R.A.M.C. Journal, September, 1908.
[2] Allahabad Pioneer, March 13th, 1909.

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[1] Vide his article in R.A.M.C. Journal, September, 1908.

malaria can be practically abolished from it. Major James and his coadjutors have, in my opinion, been guilty of a very grave scientific crime in thus unwarrantably attacking proven prophylactic measures. In India our whole difficulty has been to *impress upon a lay bureaucracy the necessity of giving effect* to the great discovery of Ross, so far with but very indifferent success. Opposition from without we are accustomed to, but when it comes from within our own ranks, the mischief accruing may not only undo the work already accomplished but may take years to remedy. Dealing as we are with by far the most important factor in the development of tropical and subtropical countries, it seems to me that with existing evidence and experience available, Major James and Captain Christophers should have been very sure of their facts before venturing to enunciate their conclusions. Their whole attack *is unwarranted and unwarrantable; their "facts" are* fallacies; their data false. They have, in my opinion, done incalculable harm; for it is an easy matter to make an assertion but a difficult thing to refute it. Already the effect is apparent in the lay press and elsewhere, and it is certain that with the prevalent procrastination of the East, the awakening which we had fondly hoped was at hand, will now be indefinitely postponed. I for one should not care to bear the responsibility they have so lightly assumed.

I am, Sir, yours faithfully,

R. H. FORMAN,

Colonel, R.A.M.C.; P.M.O. Bombay Brigade.

At Sea, June 8th, 1909.

PURULENT CONJUNCTIVITIS IN INFANCY.

To the Editor of THE LANCET.

SIR,—Those who continue to call the conjunctival inflammation of infancy by the antiquated, inaccurate, meaningless term "ophthalmia neonatorum" may be reminded of a wise saying of Lord Bacon's—namely, "*It is the nature of man, to the extreme prejudice of knowledge, to delight in the spacious liberties of generalities.*" In no department of medicine does a more illogical conservatism prevail, so far as terminology is concerned, than in that of ophthalmic surgery. "Yes, ophthalmia neonatorum is wrong," is the argument, "but then, you know, it has been sanctified by use." Again, much is *made of the statement that the term is useful as a generic* one, implying by this that an infantile conjunctivitis which can be caused by more than one micro-organism had better be described as, not what it is, a conjunctivitis, but as an ophthalmia, which it is not. Thus, to the extreme prejudice of knowledge, a spacious generality is indulged in, to which, as I have frequently observed, much of the confusion in, and the deplorable results of, the treatment of the disease may be *directly ascribed. But there is another illogical conserva*tism in addition to that above mentioned which is undeniably more serious in this connexion. I allude to the far prevailing belief that only strong solutions of silver nitrate are of any use in the prevention and treatment of purulent conjunctivitis due to gonococcal infection in the adult and in infancy. A recent committee upon this subject in its final report has laid stress upon the use of a 1 per cent. solution of the drug. On paper this may appear to be a solution of very moderate strength. But in actual fact it consists of five grains of the silver nitrate in solution, whereas, for 25 years at least I have found that the strongest solution which is necessary is one which contains no more than one grain of the drug to the ounce of water. A great point has been made of the fact that the mothers of Liverpool, possessing babies at the breast, suffering from gonococcal infection of the conjunctiva, can be admitted, with their infected offspring, into a hospital where the conjunctival inflammation can be at once dealt with by skilled treatment. If this step is necessary for the mothers of Liverpool I can only say it is perfectly unnecessary for the mothers of the district of West London, who come with their babies to the West London Hospital. The mothers of the West London district, or those representing them, cure the babies themselves by the instructions given them, which include the treatment which I have prescribed for 25 years, and a solution of silver nitrate of the strength of one grain to the ounce of water. There is no fuss, no difficulty; the cases are brought twice a week for my inspection, and if the corneæ are intact at the time of the first visit, nothing else happens than perfect recovery from the conjunctival inflammation, no matter of what virulence the infection might be. I have so repeatedly published and taught the lines of treatment by which these results can be attained that it is unnecessary here to allude to them particularly. Meanwhile I am glad to see that my suggestion, *published in a letter to* THE LANCET *at the beginning of the* year, that the International Ophthalmological Congress should appoint a sub-committee to consider the standardisation of the treatment of purulent conjunctivitis in infancy, has been adopted. I am, Sir, yours faithfully,

Wimpole-street, W., June 24th, 1909. PERCY DUNN.

THE USE OF ANTI-DIPHTHERITIC SERUM IN NON-DIPHTHERITIC INFECTIONS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of May 15th you were good enough to comment editorially (p. 1407) upon a communication (p. 1385) in which I suggested the use of anti-diphtheritic serum in the laryngitis of measles as a matter of routine and without waiting for a bacteriological diagnosis. My point was that the laryngitis occasionally supervening in measles may be diphtheritic in nature, and that therefore such an eventuality should be forestalled by the immediate use of serum. I adhere to that thesis, and as the matter is of some importance in daily practice, may I answer the argument in your editorial note? You maintain that laryngitis is a symptom rather than a complication of measles and only endorsed my plea when that laryngitis was membranous in character. I will only quote one authority to decide between us—namely, Dr. E. W. Goodall in his article on "Measles" in the last edition of Hutchison and Collier's "Index of Treatment" (p. 525). He "strongly recommends that in all cases of laryngitis in *measles occurring in localities where diphtheria is at all* prevalent [and where, may I ask, is it not?], a subcutaneous injection of 4000 units of antitoxin be given." The really important question upon which my critic did not touch seems to me to be whether antitoxin is harmless should the case prove one of other than diphtheritic infection. It is years now that serum has been recommended in conditions very different from the disease for which it was first intended. Thus, it has been used in cerebro-spinal meningitis, in anæmia as a stimulant and tonic, in tetanus, in menorrhagia, and in hæmophilia. Recently in your columns[1] Mr. Frank Argles refers to its value in "cases of quinsy or bad scarlet fever throats."

Now, Sir, my only reason for recommending the serum was on the chance of the infection proving diphtheritic, and the belief that the risk of delay was greater than the risk of an unnecessary injection of antitoxin would alone, in my opinion, justify its use. I do not believe the indiscriminate use of antitoxin to be free from danger, and cannot give entire credence to those *statisticians who compile hundreds* of thousands of cases with no untoward consequences other than slight discomfort, slight urticaria, and slight arthritis. I have myself seen an injection of fresh antitoxin followed, in an adult, in less than 20 minutes, by intense dyspnœa, collapse, and complete unconsciousness, with, as the pulse returned, the expectoration of an enormous quantity of blood-stained froth, and later, by severe arthritis and urticaria. The initial syncopal state lasted not less than two hours, throughout which period death appeared imminent.

In the *Therapeutic Gazette* of March 15th, 1909, Gillette of New York collects 16 cases of death and 10 cases of grave collapse *following injections of antitoxin, in most of* which some respiratory abnormality—asthma, bronchitis, hay fever —had pre-existed. Fatal cases of injections of horse-serum have also been recorded. Of Gillette's fatal cases only two lived longer than ten minutes after the injection. In only one could anaphylaxy be alleged, an injection having been given ten years before. It is impossible to exaggerate the importance of these facts, and I venture, Sir, to conclude that their interpretation should lead us *to extreme care in the use* of antitoxin and to limit its employment to cases in which the diphtheritic poison is evident or suspected.

I am, Sir, yours faithfully,

A. A. WARDEN,

Visiting Physician, Hertford British Hospital, Paris.

June 26th, 1909.

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[1] THE LANCET, June 5th, p. 1636.

MEDICAL INSPECTION OF SCHOOLS IN SCOTLAND: THE POSITION OF FEMALE ASSISTANT INSPECTORS.

To the Editor of THE LANCET.

SIR,—As several Scottish councils are at present seeking assistant medical inspectors and offering lower terms for women than for men, I ask your permission to draw special attention to the fact. Edinburgh City, Fife, and Forfarshire, which have all accepted the recognised minimum of £250 per annum for male assistants, offer £200 and £150 respectively for the corresponding female appointments. Several reasons, the ingenuousness of which is doubtful, have been publicly given, such as that the work of the female inspector is to be less important, or that if the female medical inspectors are remunerated at the same scale as males the female teachers will demand like treatment. The fact is that the councillors believe the supply of women to be cheaper than that of men. From the point of view of the profession the services performed by the men and women are equally incumbent on the councils, and as the prospect of advancement before the assistant is even less for women than for men it is desirable that every woman should loyally support the contention that for women as for men a whole time appointment in a service which is almost a drawback for any other department of medical work requires a minimum salary of £250, and that the councils should be made to realise this by receiving no applications for the female assistant inspectorship until the terms are adequate.—I am, Sir, yours faithfully,

Dundee, June 30th, 1909. R. COCHRANE BUIST, M.D. Edin.

A SYSTEM OF DIET AND DIETETICS.

To the Editor of THE LANCET.

SIR,—In your interesting review of the above work in THE LANCET of to-day I am somewhat surprised to find that you had no adverse criticism to offer regarding Dr. Edmund Cautley's account of the Salisbury diet, which, despite the editor's assurance that the book is written "by men who have had special experience of the subjects on which they write," can only be described as incomplete and erroneous. The vital error in Dr. Cautley's article has reference to quantity. Dr. Cautley says that the diet consists of two to four pounds of meat daily and three to five pints of hot water. Does Dr. Cautley mean that certain types of cases are allowed two pounds a day, others four pounds, while others again have intermediate quantities? Or does he mean that all types of cases are placed indiscriminately upon a minimum of two pounds and that this amount is gradually increased to four pounds? Whichever way it may be, a minimum of two pounds a day, divided between three meals (Dr. Cautley does not mention the number of meals), *means nearly 11 ounces at each meal.* As an initial quantity this will in the majority of cases greatly overtax the digestive capacity of the patient and cause disaster. The largest quantity prescribed by Salisbury at the commencement of treatment was eight ounces a meal, and often it was much less. Thus, in chronic rheumatism he commenced with a minimum of two ounces a meal and stopped at a maximum of eight ounces. I am aware that in certain cases—obesity, for example—he gradually increased the diet to a relatively large amount, but only after assuring himself by analyses of the urine and fæces that the patient could take it with advantage. Personally, in cases in which I have prescribed the diet I have found that three to four ounces is usually the most suitable quantity to begin with, and that it is seldom necessary or advisable to increase it beyond eight to ten ounces. I think I am right in saying that this represents the experience of the majority of physicians who have had occasion to prescribe the treatment. Some cases do much better on beef-mince (which Dr. Cautley does not mention) than on beef patties, his recipe for which, by the way, is not the one described in Salisbury's latest work.

I hold no brief for the Salisbury diet, which, in common with all restricted systems of diet, is liable to abuse and should only be prescribed with caution. On the other hand, when limited to carefully selected cases, and suitably modified both with regard to the disease and the individual, it will frequently prove a valuable therapeutic weapon where less drastic measures have failed. Therefore it is to be regretted, inasmuch as Dr. Cautley has written what will undoubtedly be regarded as an authoritative article on the subject, that he has not given a more correct and detailed account of its *rationale*.

I am, Sir, yours faithfully,

Wimpole-street, W., June 26th, 1909. ERNEST YOUNG.

THE DETERMINATION OF SEX.

To the Editor of THE LANCET.

SIR,—In the review published on May 22nd of my book on the "Causation of Sex" you advocate the "accumulation of data of proved scientific accuracy." Towards this collection of data I send you this fact. The birth of a princess to the Queen of Spain on Tuesday, June 22nd, not only entirely confirms my theory, but was correctly foretold by means of the data given on pp. 182, 183 of my book. As the Queen of Spain was delivered on May 10th, 1907, of a boy and expected to be delivered again in June, 1908, it was clear by my theory that her second child would be of the same sex as the first, and so on June 23rd, 1908, the boy Prince Jaime was born; becoming again pregnant and again expecting in June, 1909, it was evident the child would be of the opposite sex to the last, and so a princess was duly born on June 22nd, 1909. So that, as was the case with the Empress of Russia's children, my theory is fully confirmed.

I am, Sir, yours faithfully,

Broadstairs, June 26th, 1909. E. RUMLEY DAWSON.

THE DIAGNOSIS IN PARALYSIS OF THE EXTRINSIC MUSCLES OF THE EYE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 19th I read with much appreciation Mr. Angus Macnab's interesting and clever paper on "A Simple Method of Diagnosis in Paralysis of the Extrinsic Muscles of the Eye." I quite agree with him when he says ordinary methods require "a very efficient memory or a severe mental effort." A few years ago I read an article by Mr. Priestley Smith of Birmingham, in which he laid down the following rules for the diagnosis of paralysis of ocular muscles:—1. Ascertain in which direction the images lie farthest apart: the inefficient muscle is one of those which normally turns the eyes in that direction. 2. Ascertain which image belongs to which eye: the inefficient muscle belongs to the eye whose image lies farthest in the said direction. I have carried these rules in my memory and found them of great assistance. I thought they might interest Mr. Macnab.

I am, Sir, yours faithfully,

G. VICTOR MILLER, M.D. Edin.,

Ophthalmic Surgeon, Stockton and Middlesbrough Hospitals.

June 30th, 1909.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University.

THE Bill to dissolve University College, Bristol, and to transfer all the property and liabilities of that College to the University of Bristol, came before the Committee on Unopposed Bills in the House of Commons last week. After some slight discussion the Bill passed and was ordered for third reading. On Thursday, June 24th, the new buildings of the Merchant Venturers' Technical College, which have arisen on the site of those consumed by fire a year or so back, were dedicated by the Bishop of Bristol and formally opened by Lord Reay; and on Friday evening a conversazione was held within the new buildings themselves. They form a handsome and imposing block and occupy a central situation. They are, unfortunately, separated by nearly half a mile from the main block of the buildings of the University, with which the College is now incorporated. The Faculty of Engineering in the University of Bristol will be greatly strengthened by this addition both in teaching staff and in premises. One of the difficulties which the University has to face is the distance of several of its centres of work from the main buildings; the General Hospital and the Royal Infirmary are some minutes' walk from the medical school. This is not, however, so great a drawback as it might seem, for by a judicious arrangement of the curriculum it can be overcome.

The Anatomical Society of Great Britain and Ireland.

This society held its annual meeting in Bristol for the first time on June 25th and 26th. Scientific proceedings were limited to the morning and afternoon of the first day, and were held in the anatomical theatre of the University. On Friday afternoon there was a reception at the house of Mr. P. J. Worsley in Clifton, and in the evening the society and its guests dined at the Queen's Hotel. Professor A. M. Paterson of Liverpool was in the chair, and among those present was Professor Ramström of Upsala. Several of the speakers made apt and graceful allusion to the new University; and all who knew the history of the later stages of its development were glad to find in these speeches some recognition of the untiring efforts of Dr. E. Fawcett, the professor of anatomy and dean of the Faculty of Medicine.

The Recent Epidemic of Scarlet Fever at Sidmouth.

Dr. R. J. Reece, Local Government Board inspector, has issued his report on the inquiry which he recently held in reference to an outbreak of scarlet fever at Sidmouth (Devon) and the sanitary administration of the urban district. Dr. Reece states that from October, 1908, to February, 1909, 52 cases of scarlet fever were notified in Sidmouth; none of the cases proved fatal, and the epidemic was mild and of comparatively small dimensions. Dr. Reece states that the dwellings of the poor are for the most part clean, but in certain localities cottages are crowded together, without any means of thorough ventilation, and adds that there is no systematic inspection of meat and foodstuffs. Dr. Reece says that the town council of Exeter has agreed, since 1905, to receive infectious cases from Sidmouth in its isolation hospital. Dr. Reece suggests that Sidmouth and five adjoining sanitary districts should unite in building an isolation hospital, and in appointing a medical officer who should give his whole time to public health work.

The Local Government Board and the Axminster (Devon) Rural District Council.

At a meeting of the Axminster rural district council, held on June 25th, it was stated that the Local Government Board had written saying that it would sanction the appointment of the medical officer of health (Mr. W. Langran) for another year, but acting upon the advice of Dr. R. Deane Sweeting, who had recently inspected the district, the Board recommended the district council to combine with neighbouring authorities with a view to the appointment of a joint medical officer of health, possessed of special qualifications in public health, who would devote his whole time to public work.

Health of Cornwall in 1908.

The annual report of the sanitary committee of the Cornwall county council for 1908, which has just been issued, shows that the birth-rate during the year was at the rate of 22·44 per 1000, compared with an average of 21·97 for the last five years. The death-rate was 14·75, against 15·08 in 1907. Of the 4763 deaths, 748 were of children under one year, against 678 in the previous year. 187 deaths occurred from zymotic diseases; 133 of these were due to measles, whooping-cough, and diarrhœa. 440 deaths were due to "consumption." The report shows an increased birth-rate, a decreased general death-rate, a decreased zymotic death-rate, a decreased infectious diseases rate, a decreased phthisical death rate, and a decreased percentage of the combined diseases of consumption, bronchitis, pneumonia, and pleurisy.

The Royal Gloucester Infirmary.

The King visited the Royal Agricultural Show at Gloucester on June 23rd, and in his reply to the civic address said: "I am happy to take this opportunity to inform you that I give my permission for the title Royal to be prefixed henceforward to the name of the Gloucester General Infirmary in recognition of the admirable work done by those responsible for its management, and the continued and successful efforts of its staff in the prevention and alleviation of human suffering."

Testimonial to Mr. E. M. Grace.

The Testimonial Fund to Mr. E. M. Grace has now reached about £530.

The Remuneration of Public Vaccinators.

At a meeting of the South Molton (Devon) board of guardians held last week Mr. A. H. Brown tendered his resignation as public vaccinator for the Witheridge District, stating that it was quite impossible for him to carry out the duties for the small fees he received. The guardians decided to ask Mr. Brown to accept a fee of 5*s.* per case, this being the old fee before the recent reduction was made.

The British Dental Association.

The annual meeting of the Western branch of the British Dental Association will be held at the University of Bristol on July 16th.

June 29th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE summer term is practically at an end. The examinations are either completed or are in their final stages, and the departments of chemistry and physics are preparing to move to their new quarters at Bournbrook. The entries for the examinations show a very definite increase, most marked in the departments of the Faculty of Science and in the Faculty of Commerce, whilst the other faculties practically retain the good positions they previously held.

The Hospital Saturday Fund.

Saturday, June 19th, was Hospital Saturday in Birmingham, and the thirty-seventh annual collection made on that day reached the sum of £13,739 0*s.* 3*d.*, or about £1121 less than the amount collected on the corresponding day last year. The Fund will not close for several days yet, and in spite of the bad times, it is still hoped that even if the record sum of £20,632 9*s.* 10*d.* collected last year is not attained this year, the final total will still be over £20,000. On Friday, June 25th, the total amount had risen to £17,554 11*s.* 9*d.*, which is rather more than £1200 less than the total on the same day last year, and if the hope of £20,000 is to be realised the contributions still to come in will have to be larger or more numerous than has usually been the case during the later days of the collection.

The Feeble-Minded.

The truth about the feeble-minded is gradually being put in plain words before the public, and at a recent meeting of the Birmingham education committee Mrs. Pinsent, who has taken so active a part in work associated with the care and control of defectives, spoke very forcibly regarding the necessity for legislation giving legal control over those unable to take care of themselves. In moving the adoption of the report of the special schools after-care committee, Mrs. Pinsent stated that whilst the children improved very much while they remained in school it was found that when they were turned out into the world only 5 per cent. proved capable of earning 10*s.* a week, and many who as soon as they left school became wage-earners fell back into the class of unemployed. The experience of the after-care committee has led Mrs. Pinsent to the conclusion that the mentally defective are persons who require life-long control, some to a greater and some to a less extent, but such control must be provided unless the work spent on them during their earlier years is to be entirely wasted.

Treatment Associated with Medical Inspection.

Worcestershire has initiated a scheme for the purpose of dealing with the cases of children who have been shown by medical inspection to be in need of care and treatment. The draft scheme has been adopted as a basis and a committee has been appointed to draw up a plan based on the scheme and to present it at a subsequent meeting. The scheme suggests a central committee consisting of members of the education committee and sanitary sub-committee, such comup the cases noted by the medical inspectors, to induce the parents to carry out the suggestions of the medical officers, and to persuade parents to enter their children as members of provident dispensaries or friendly societies. It is further suggested that the local committees should endeavour to provide the necessary help in special cases, and in cases of criminal neglect should report to the education committee. The scheme seems practicable and workable, and the plan will be awaited with interest. The position of the medical officer to the clubs must be protected if children are to be sent to some of these institutions for treatment.

The South Staffordshire Small-pox Hospital.

At a recent meeting of the South Staffordshire Small-pox Hospital board a suggestion for the utilisation of the hospital for the treatment of phthisis from an educational point of view was considered. The scheme emanated from Dr. George Reid, the medical officer of health for Staffordshire, and its central idea is that phthisical patients should be sent to the hospital for a limited time, not especially for treatment but to be taught how they should live at home. The scheme would necessitate the erection of some shelters, a medical officer, a small number of nurses, and a domestic staff. Dr. Reid believes that it would be safe to use the buildings for the purpose he desires provided certain parts are left vacant for the reception of any small-pox cases which may arise, and he thinks the cost in upkeep of 35 beds would not exceed £2767, whilst at present the upkeep is costing £1530, for which nothing is being obtained.

Town Funds and Hospital Necessities.

The financial difficulties of the Walsall and District Hospital led the committee of the hospital to apply to the general purposes committee of the town council for an annual grant towards the upkeep of the hospital. The general purposes committee reported that it was unable to accede to the request, and on the report being presented it was proposed by a member of the council that the trading committees of the corporation should be empowered to subscribe to any of the charitable institutions of the town from which their employees received benefit. The suggestion obtained support, but it was pointed out that the eventual result would be to place the hospital on the rates, and on a vote being taken the motion was defeated by a large majority.

June 29th.

MANCHESTER.

(From our own Correspondent.)

Treatment of Consumptive Poor.

At a meeting of the Salford guardians held on June 25th it was decided to confirm the action of the general purposes committee in approving the majority of the recommendations issued by a committee appointed by the North-Western Poor-law Conference in regard to special treatment of phthisical cases. For the treatment of out-door poor coöperation was urged between health authorities and guardians, separate sleeping accommodation for consumptives, the distribution of helpful literature by relieving officers, and the sending of special nurses periodically to consumptive poor people. For the indoor poor, isolation and special treatment, especially as to open air, were urged. It was also agreed to hold a special meeting of the general purposes committee to discuss the need for more suitable accommodation for the housing and treatment of consumptives at the Hope Hospital, and to consider the advisability of utilising some land adjoining the hospital which belongs to the guardians.

Margarine and Butter.

The question of margarine *v.* butter, or of butter-cum-margarine, is one of considerable interest for a large section of the population of Manchester, so that the proceedings of Standing Committee B of the House of Commons on June 21st may fairly be noticed in a communication from a city which will be so largely affected as Manchester in the "Sale of Margarine Bill" introduced by Mr. Kilbride. The object of the Bill is to prevent margarine from being so coloured as to resemble butter, and so to prevent its fraudulent sale as such. The opposition to the Bill on the part of certain of the Members for Manchester was curious, and their reasoning, so far as reported, not easy to follow. Mr. Byles, one of the Members for Salford, moved to delete Clause 1, the operative clause of the Bill. He said that "the fact that margarine was coloured to resemble butter did not mean that it was fraudulently sold as butter. Imitation was the sincerest form of flattery. Ladies who could not afford a silk dress sometimes wore mercerised cotton, and he did not think they should be prevented from buying such an imitation. There was the artificial flower trade. People were sometimes deceived in that way. A little while ago he bought on the kerbstone a penny bunch of violets. When he got it he found that it was made of paper. He did not suggest, however, that Parliament should interfere." Such reasoning as this would justify any amount of adulteration. If the resemblance of margarine to butter were made close enough it would at any rate make fraud easy and make it tempting. The illustration given by Mr. Byles does not apply, and is therefore irrelevant. Ladies do not buy mercerised cotton thinking it silk. Mr. Harwood said that the people guilty of fraud were not the makers of margarine but those who bought it and mixed it with butter. Mr. A. H. Scott opposed the Bill because he said "it proposed to injure 90 per cent. of honest traders for the sake of getting at a small proportion of dishonest people," and he told the story of two clever young Irishmen in Manchester, who have been heard of before, who bought margarine to sell it to retailers, and they in turn bought it to sell to the public as butter. They sold 20 pounds or 30 pounds a week to each retailer, and undertook themselves to pay any penalties that might be imposed on the retailers if they were found out. It was easy to convict the retailers, but so far it has been impossible to catch the two clever Irishmen. Sir F. Cawley opposed the Bill as he said his constituents would have to pay more for their butter if it were passed. Some of our legislators do not take a very stern view of adulteration, but it is satisfactory that the penal clause was passed by 23 votes to 13. If margarine is sold on its merits all well and good, but if it is sold as butter the fraud should be punished.

Town Planning Bill.

A petition in favour of the Town Planning Bill has been forwarded to the House of Commons by the Manchester and Salford Sanitary Association and will be presented by Mr. Joynson-Hicks, M.P.

Should Hospital Patients Smoke?

One of the medical officers of the Hope Hospital has recommended to the committee of the Salford guardians that if the luxury of smoking be allowed it should take place only out of doors. This rather hard measure has not been meted out to the inmates, chiefly through the sympathetic pleading of one of the lady guardians. She pointed out that it would be a great hardship on the paralytics and bed-ridden, and it was finally determined that regulations should be drawn up permitting bed-ridden patients to smoke at certain hours and giving reasonable latitude to those desirous of smoking in the day rooms.

Langho Reformatory.

Regrets have often been expressed that the results of detention at the Langho Reformatory for Inebriates have in so many cases been apparently *nil*, but an effort is being made to do something more than keep these poor women there for a time, and then dismiss them without any attempt to help them to resist their special temptation. The Chief Constable of Manchester, Mr. A. Peacock, has written to the board of management suggesting that it might be possible to get together a number of ladies to take an interest in women patients after their period of detention had expired. Through them the women might be kept straight and honest work might be found for them. It is said that the board favours the idea, and it is earnestly to be hoped that it will be carried out. A tactful, strong, but sympathetic influence is just what is required in many of these cases to prevent the victim of drink from falling back into the old ways.

June 29th.

SCOTLAND.

(From our own Correspondents.)

Death of Professor D. J. Cunningham.

As was recently noted in The Lancet, the state of health of Professor Cunningham, who occupied the chair of anatomy in the University of Edinburgh, was giving his friends the gravest anxiety. He had sojourned in Egypt during the winter without material benefit, and when he returned to Edinburgh it soon became known that only one issue of his illness was to be looked for. He died on June 23rd, and was buried on the 26th in the Dean cemetery. The funeral service was conducted in St. Cuthbert's Church. The principal part of the service was taken by the Rev. Professor Taylor, the prayers being highly impressive [illegible] to the occasion. The members of the University [illegible] the Senatus, were present in [illegible] of the Royal Colleges of Physicians and of Surgeons were present in academic costume and attended by their mace-bearers. The students were present in large numbers and many public bodies were represented. In the whole Edinburgh School of Medicine Professor Cunningham's death is not only deeply mourned on account of his personal attractiveness, but it is felt that the medical faculty of the University has sustained an almost irreparable loss.

Death of Two Edinburgh Medical Men.

At Boscombe, Bournemouth, on June 25th, there passed away in the person of Peter Alexander Young, M.D. Edin., F.R.C.P. Edin., one who was well known in Edinburgh medical circles for many years. Dr. Young graduated in medicine at Edinburgh in 1867. He practised in Portobello for many years, but over 20 years ago removed to Edinburgh, where he had a large general and family practice. For many years he was honorary treasurer to the Royal College of Physicians, and in that capacity had frequently to represent the College on public occasions, a duty which he always performed with dignity and acceptance and to the satisfaction of the Fellows. He was a keen Volunteer and took an active part in ambulance work. He was a justice of the peace for the County of the City of Edinburgh. He took an active part in various philanthropic movements. His genial and friendly bearing made him a favourite with his brethren, and his patients were much attached to him. Failing health compelled him to resign his connexion with his College, and soon thereafter led him to abandon practice and to seek the milder climate of Boscombe, where his death took place.—On June 24th, at Newton, Nairn, William Alexander Finlay, M.D. Edin., F.R.C.S. Edin., recently of Trinity, near Edinburgh, passed away. Dr. Finlay came of a medical family and succeeded his father in general practice in Trinity. Until his health began to fail he was the leading practitioner in the district and was well known to his brethren in Edinburgh as an excellent practitioner. Some years ago he was one of the surgeons to Leith Hospital. He died at the house of his brother, Sir Robert Finlay, himself at one time a student of medicine and Attorney-General in the last Unionist Government.

The Responsibility for the Treatment of Consumptives in Glasgow.

The parish council of Glasgow has felt for some time that too much of the responsibility for the treatment of consumptives rests on its shoulders. It does not fall within the powers of the council to undertake the treatment of the consumptive at the period of his illness most likely to result in recovery—i.e., when he is still able to work; but at a later period, when the disease is so advanced as to render him unfit for work and correspondingly more unlikely to recover, he is sent to one of the parish hospitals for treatment, and his wife and family are thrown upon the rates for support. As the council has not the power to interfere at the earlier stage of the disease, while the man is still a possible wage earner, it has for some time been urging upon the corporation that it is its duty to undertake the responsibility of these cases in the earlier stages. It is impossible to deny that such a course is economically as well as medically sound, and in order to consider the whole matter the corporation's sub-committee on the prevention of tuberculosis has had a meeting with representatives of the parish councils of Glasgow and Govan, the National Association for the Prevention of Consumption, Quarrier's Homes, and the Lanfine and Bellefield sanatoriums. As a result of this meeting a memorandum has been prepared by Dr. A. K. Chalmers, medical officer of health of Glasgow, suggesting the following points for consideration: (1) That phthisis be included among the notifiable diseases for a period of three or five years; (2) that in addition to the tuberculosis dispensary, at present conducted in the sanitary chambers, similar facilities be provided in the eastern, western, and southern districts of the city; (3) that a nurse be appointed to each dispensary for systematic visitation of the houses and families of those in attendance thereat; (4) that the work of home visitation be placed under the charge of a medical assistant appointed for the purpose; (5) that until additional hospital accommodation is available for infectious diseases the parish councils of Glasgow and Govan be invited to consider the conditions under which cases of the class formerly admitted to Baird-street Reception House may be accepted by them; and (6) that the local branch of the National Association for the Prevention of Consumption and the friendly societies be invited to a conference to consider the question of making further provisions for assisting the consumptive worker to obtain the benefits of sanatorium treatment.

Abuse of Medical Charities.

At a recent meeting of the Glasgow and West of Scotland branch of the British Medical Association the branch council reported on its inquiry into the alleged abuse of medical charities. It stated that circulars were issued to members of the medical profession in Glasgow and the neighbourhood asking for specific instances of the abuse of medical charities. The Council received only 49 replies to 600 circulars. In face of so limited a response it thinks that it can hardly be asserted that the medical profession in Glasgow suffers to any large extent from the abuse of medical charities. It appears, however, that there is a certain amount of abuse, and unfortunately it is frequently associated with cases recommended by medical men. The general view appeared to be that such abuse as exists is confined mainly to outdoor departments and dispensaries.

Medical Tutors for the University of Glasgow.

Under the will of Dr. John Hall, a graduate of the University of Glasgow, who died last April, the University will ultimately benefit to the extent of about £40,000. This sum has been left to the Senate of the University of Glasgow as an endowment for the foundation of tutorial fellowships in connexion with the study of medicine, surgery, and midwifery at that University, to be called the "Hall Tutorial Fellowships,"

fessors of surgery, medicine, and midwifery. The fellowships are to be awarded after examination (either special or part of the graduation examination) and each of the fellowships is to be of the value of £200 per annum, payable in advance at the beginning of each session. The fellowships, of which there are to be as many as the income will permit, are to be held for three years, and may not be held with any other scholarship, bursary, or other educational emolument. Also the Fellows are to live within three statute miles of the University and are to devote their whole time to practical instruction of students under the direction of the professors, and may not engage in any private practice or tuition.

The Remuneration of Medical Officers of Schools.

A meeting was held in the Medical Club, 22, Carlton-place, Glasgow, on June 29th, of representatives from all the medical societies of Glasgow to consider the question of medical inspection of school children, and more especially the remuneration that it was proposed to give to the medical officers about to be appointed. A number of gentlemen spoke, and while several were of the opinion that no part-time appointments should be made, on the motion of Dr. W. A. Caskie it was unanimously resolved that the remuneration to the quarter-time medical officers, whom the School Board propose to appoint, be made on the basis of a sum of half a guinea per hour. It was further unanimously agreed that a small committee be appointed to draw up a memorial embodying the views of the meeting as expressed by Dr. Caskie, and that this same committee be empowered to go as a deputation to the School Board should they consider it advisable.

Surgical Operation in the Street.

At Dumbarton recently a most unfortunate accident occurred to a boy through standing on the step of a friend's bicycle. The boy was barefooted, and his right foot became entangled with the chain and gear-wheel and was severely crushed. Although medical assistance was at hand the foot could not be released without amputating the great toe, and this operation was carried out on the pavement, after which the boy was removed to the cottage hospital.

Treatment of the Insane in the Rathven Colony.

Attention is called in the report of the General Board of Commissioners for Lunacy for Scotland to the success which has attended the efforts of the parish of Rathven to provide for its patients under private care. 50 per cent. of the insane chargeable to it are thus provided for. In the present year the total chargeable insane of the parish is 56, an increase in 14 years of no less than 126 per cent., of whom 28, or 50 per cent., were met with in private dwellings. The colony, numbering 44 patients (26 males and 18 females), is scattered over a district six miles by five situated in the parish of Rathven. The patients are lodged with crofters and small farmers. Of the ailments 27 were imbecile, 9 demented, 4 maniacal or melancholic, delusional insanity accounted for 1, while there were three ill-defined types. The ages were from 15 to 80. Six were paid for at the rate of 3*s.* per week and under, five at a rate exceeding 3*s.* and under 5*s.*, 24 exceeded 5*s.* and under 6*s.*, and ten from 6*s.* to 7*s.* As regards the productive capacity of the patients, 7 per cent. are classed as very good, 24 per cent. as good, 21 per cent. as moderate, and 48 per cent. as useless. The movement to develop and to extend the family care of the insane, at first looked at somewhat askance, has been approved, encouraged, and developed to the extent indicated chiefly owing to the enlightened management of the colony.

Forfarshire School Boards and the Medical Inspection of School Children.

A conference of the Forfarshire school boards with the Forfarshire secondary education committee was held on June 23rd to consider the question of the medical inspection of school children. It was agreed to appoint Dr. N. J. Sinclair, medical officer of health of the county, chief medical officer at a salary of £200. He will be expected to devote about half his time to the work of supervising the medical inspection of the children. It was also decided to give Dr. Sinclair a male and a female assistant, whose whole time will be given to the examination and supervision of the children. It was agreed that the first male assistant should be appointed at a salary not exceeding £250 and that the second assistant female should be appointed at a salary not exceeding £150. It was also agreed that the sum of £150 per annum should be assigned for travelling expenses for the school medical officer and his assistants, and that the sum of £120 should be assigned for the payment of the salary of a clerk-typist and for the expenses of stationery and printing. It was also decided to provide each school in the county with a weighing machine and a measuring rod.

Outbreak of Typhus Fever in Dundee.

An outbreak of typhus fever has been reported by Dr. C. Templeman, medical officer, Dundee. There have been nine cases, and the infection is believed to have been traced to the selling of the effects of a person who had died from it. Comment was made in the meeting of the public health committee as to the sales of old clothes, &c., on ground let by the town council for the purpose, and on the dangers of infection therefrom, and the question was raised as to whether the sanitary authorities had not power to put a stop to it. The outbreak has so far been confined to two families.

Death of Dr. William Hunter of Hong-Kong.

The death of Dr. William Hunter, Government bacteriologist, Hong-Kong, has been announced by a cablegram dated June 10th. It must be feared, since his professional duties called upon him to visit natives suffering from plague and other infectious diseases, that his death was due to infection in some form. Dr. Hunter was the son of the late Rev. William Hunter, Macduff parish church, and had a successful career at the University of Aberdeen. In 1896 he won the John Murray medal and scholarship, and in 1897 the George Thompson Fellowship, graduating the same year with honourable distinction. He is survived by his wife and one child. While he and his family were home on holiday last year in London, the other of his children met death by falling down a lift.

June 29th

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Municipal Improvements: Extension of Main Drainage System.

AN inquiry of great importance to the Dublin ratepayers was carried out last week in the city hall before the chief engineering inspector of the Local Government Board. It dealt with the application of the corporation for sanction of the following loans: £100,705 for extending the electric lighting mains and plant; £100,000 for completing the main drainage; £17,400 for erecting lodging-houses for the working classes at Inchicore; £10,632 for completion of refuse destructor; £10,000 as advances under the Small Dwellings Act; £10,000 for carrying out street improvement works; £1320 for the lighting of Drumcondra and the North Circular-road by electricity; £1006 for private improvement expenses; and £2365 for carrying out street improvement works at the Ranch, Drumcondra. Regarding the provision for completion of the main drainage, evidence was given of the particulars of the population of each of the new districts which it was proposed to connect with the main drainage scheme; also of the quantities of sewage which would be carried in the new mains. It was estimated that the total accession of sewage would be to the amount of 3,697,200 gallons. The population already connected was 215,065, and the number which it was now proposed to connect was 88,424. When the drainage was completed the total flow would be 15,187,200 gallons per day. The inspector asked whether the additional connexion would have the effect of making the Liffey brighter and purer than it is at present. The reply was an unhesitating affirmative, which will be confirmed by all who remember the June odours of the Liffey a few years ago, and the improvement which has already arisen from the drainage works.

Death of a Crimean Sister of Charity.

By the death of Sister Theresa, Reverend Mother of the Sisters of Charity in charge of the nursing of the Cork North Infirmary, a notable personality has passed away. During the Crimean war, when she was quite a young nun, she volunteered to go to the front to nurse the sick, the wounded, and the dying. She partook of the great privations of the troops, and her bullet-pierced garments, affectionately preserved by the members of her order, are a proof that in the cause of mercy and charity she did not hesitate to advance into the fighting-line. About 12 years after her return from the Crimea she was appointed Sister Superintendent at the Cork North Infirmary and brought to the discharge of her duties a clear intelligence combined with a most kindly disposition. Many past students of the hospital will hear of her death with regret.

Fever Cases in Londonderry.

At a meeting of the Londonderry board of guardians held recently a report was adopted, by 16 to 15 votes, with reference to the proposed amalgamation of the City Fever Hospital at Foyle Hill and the Union Fever Hospital. The guardians offer to pay £75 per patient annually out of the Union funds on condition that the corporation take over their entire liability in respect of hospital accommodation for fever and other infectious diseases, and that the corporation provide for and maintain all poor persons suffering from such diseases for the treatment of which the guardians are at present responsible; and, further, that any fever patients residing in the rural districts who are able to pay for treatment and wish to go into the Foyle Hill Hospital shall be admitted and charged no more than the scale of charges which applied to the city patients. The corporation is asked also to provide for all improvements and enlargements to be made at Foyle Hill Hospital at a cost of not less than £1500, subject to the approval of the Local Government Board. A committee was appointed to confer with the representatives of the corporation on the matter.

The Prevention of Tuberculosis (Ireland) Act.

At the weekly meeting of the rural council of Omagh held recently, a letter was read from the Local Government Board in the form of a memorandum on the objects of the Tuberculosis (Ireland) Act, 1908, to which was appended a summary of its provisions and also a copy of an order made by the Board prescribing the forms and stages of tuberculosis *to which, and the circumstances in which* Section 1 of the Act applied. The chairman said it would be very unwise for that council to adopt Section 1 of the Act—i.e., the section dealing with notification and disinfection—as its powers were compulsory. He thought that they should do all they could to prevent tuberculosis spreading without resorting to compulsion. Better evidence than such views could not be found in proof of the foresight of those who advocate compulsory powers under the Act, as without these powers it is clear that many county and rural councils will shirk their duty, and as a result nothing will be done to check the disease. Permissive legislation in public health matters is likely to end in failure.

The Queen's University of Belfast.

Sir James Henderson, M.A. Dub., D.L., chairman of the technical and library committee of the Belfast city council, has been appointed by the Crown a member of senate of the Queen's University of Belfast in place of Dr. Peter Redfern, Regius professor of anatomy, who has resigned.

June 29th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Indirect Massage in Ophthalmic Practice.

AT a recent meeting of the Société de Kinésithérapie M. Wetterwald, speaking on the subject of indirect massage [illegible] the tissues above or on [illegible] organ to be acted on were [illegible] of promoting the formation of a cicatrix or removing congestion. In this way an effect was produced indirectly on the circulation and innervation of the part in question. In the case of a young girl who had suffered for three months from relapsing keratitis with photophobia, lacrymation, and closure of the eyelids, M. Wetterwald found that all these symptoms disappeared in eight sittings. The treatment consisted in kneading (*pétrissage*) the tissues of the cheek, temple, and forehead without touching the eyeball or the eyelids, and this massage of the region supplied by the superior maxillary nerve influenced the special structures of the eye. M. Mesnard, speaking on the subject of the paper, said that the disappearance of congestion caused by the act of mastication was another indirect effect of a similar kind. He had often observed this phenomenon in his own case during attacks of conjunctival congestion.

Hay Fever.

At a meeting of the Academy of Sciences held on June 21st M. Delage submitted on behalf of Dr. Pierre Bonnier a memoir on hay fever, mentioning that the pollen of the gramineæ was for the most part not responsible for the production of attacks, because some patients were affected only at sea or in snowy weather, or under conditions of the most dissimilar kind, or at times of the year when no plants were in the stage of inflorescence. Hay fever was a definite bulbar trouble, a disorder of certain secretory nervous centres with hyperæsthesia of the exposed mucous surfaces and spasmodic reflex expulsive efforts; it was, in fact, a true diathesis and frequently associated with other functional abnormalities, [illegible]eatment ought to aim [illegible] bulb and reducing the [illegible] This could generally be done, he said, by applying the cautery to very small points in certain areas of the nasal mucous membrane—a procedure which had a sedative action. Energetic cauterisation, on the other hand, produced unsatisfactory effects, and must be carefully avoided.

The Antitryptic Power of the Blood Serum as a Means of Diagnosis.

At a meeting of the Academy of Medicine held on June 15th M. Widal communicated a paper by M. Poggenpohl of St. Petersburg, who has investigated the antitryptic power of the blood serum in M. Widal's laboratory and has made observations on 112 patients by the method of M. Marcus. *M. Poggenpohl has found that the antitryptic* power was as a general rule increased in cases of cancer and lobar pneumonia, whilst in other acute and chronic diseases the antitryptic index was almost always normal. The estimation of the antitryptic power of the blood serum, proposed by M. Brieger and M. Frebing for the diagnosis of cancer, was therefore of great importance in symptomatology. M. Poggenpohl did not share M. Brieger's opinion that this reaction was an indication of cachexia, because, on the one hand, he had met with it in many persons without evidence of cachexia, and, on the other hand, he had failed to discover it in many persons presenting a cachectic condition but not suffering from cancer. This property of the blood ought to be regarded as a means of defence and immunisation; antitrypsin seemed, in fact, to be a true antibody elaborated by the organism as a protection against the entrance of a proteolytic ferment which might originate in various ways.

Plague in Tunis.

At a meeting of the Société de Pathologie Exotique held on June 5th M. Conseil said that in the town of Tunis he had examined rats and their ectoparasites in reference to the propagation of plague and had arrived at results in conformity with those obtained by M. Billet in Algeria. When M. Nicolle and M. Sicre were making their investigations at the time of the plague epidemic, it was found that 8 per cent. of the rats that were caught were infected with the bacillus of plague. Although there had been no plague in the human subject since the month of February, M. Conseil had nevertheless found three infected rats. The disease was therefore endemic among those rats, a dangerous condition of things which ought to be combated by destruction of the animals.

Election to the Academy of Medicine.

M. Schwartz, surgeon to the Hôpital Cochin and *professeur agrégé* at the Faculty of Medicine, has just been elected a member of the Academy of Medicine in the section of surgical pathology.

Burglary at a Laboratory.

During the night between June 16th and 17th the laboratory of the Faculty of Medicine of Nancy was entered by burglars, who carried off instruments and apparatus of platinum and silver valued at 4000 francs.

Surgical Treatment of Renal Calculus.

At a meeting of the Surgical Society held on June 9th M. Pousson submitted statistics of 30 consecutive cases of renal calculus on which he had operated, suppuration being present in 20 of them but not in the remaining ten. In one of the ten non-suppurative cases nephrectomy was performed in consequence of an error in diagnosis and was followed by recovery which was maintained for ten years without relapse. Nephrectomy performed in the other nine cases was followed by one death, for which the operation was not responsible, as the patient succumbed to cerebral hæmorrhage 21 days afterwards. With one exception, all the other patients operated on, who could be traced, were alive and in good health. The longest time which had elapsed since the operation was five years and ten months, the shortest time being six months. The 20 cases attended with suppuration comprised three of pyelitis and 17 of pyelonephritis. The three former were treated by nephrectomy and recovered without the formation of fistula, the times elapsed since the operation were respectively five years, four months, and two months. Of the 17 cases of pyelonephritis six were treated by primary nephrectomy, with five recoveries and one death from anuria; six were treated by nephrotomy, with one death under chloroform, two deaths from shock, one death from anuria, and one death at a late stage from septicæmia, the sixth patient being still under treatment. In four cases, all of which terminated in recovery, nephrotomy had to be followed by secondary nephrectomy.

June 28th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Neuralgia of the Trigeminus Nerve.

AT a recent meeting [illegible] Aerzte Dr. Flesch read a paper on [illegible] of the Trigeminus Nerve. He [illegible] method invented by Dr. Schloesser, in which alcohol was injected into the foramen ovale or the foramen rotundum in the base of the skull where the nerve emerged. This procedure required considerable anatomical knowledge and manipulative dexterity, so that it could not be carried out by the general practitioner. In the modification suggested by Dr. Flesch the alcohol was injected into the peripheral nerve fibres, which was easily done and easily learned. He injected 1 cubic centimetre of alcohol of 80 per cent. strength, and if necessary the dose might be repeated the next day or even on four consecutive days. The result in the 19 cases so treated has been excellent so long as it lasted, but the benefit was unfortunately not permanent, for after about ten months the pains returned, indicating a regeneration of the nerve. The injection might then be repeated, and this could be done as often as relapses occurred. These peripheral injections were not so effective as the central injections into the foramen, but they were much more readily made. Of course, the extirpation of the semilunar ganglion or ganglion of Gasser was the best method, but its disadvantages, such as the complete paralysis of certain masticating muscles and the danger incurred by the eye, were rather serious. Dr. Flesch has observed that cases in which the nerve had previously been resected peripherally were not suited for his method. He has not had any result in cases of disease of the trigeminus nerve, whether of hysterical or traumatic origin. The discussion following this paper was very interesting from the practitioner's point of view. It appeared that there were several other methods which might be useful in this condition. For instance, Dr. Gussenbauer and his school have obtained recovery in such cases by violent purgation, and calomel followed by two or three pints of saline bitters was even now in use in the clinic for such nervous conditions. Ligature of the carotid artery has been tried without satisfactory result. The very drastic method of trephining over the fissure of Rolando on the opposite side, with splitting of the dura mater, has been tried by Jaboulay and Lorenz with variable results. Professor Grossmann reported 17 cases in which he succeeded in completely relieving attacks of tic douloureux by galvano-caustic destruction of the anterior end of the middle turbinal. Dr. Weil said that he had seen benefit produced by galvano-cauterisation of certain areas on the septum of the nose. He therefore believed that many attacks were due to irradiation, originating from minute lesions of the nasal mucosa, and for this reason all other remedies ought to be tried before resorting to the dangerous and not absolutely reliable operation of evulsion of the nerve or removal of the ganglion. Professor Fraenkel said that he had in several instances removed the second branch of the nerve by a novel route from the canine fossa and through the antrum of Highmore with very satisfactory results. This method was safe and not attended with very much hæmorrhage. From the opinions expressed in the discussion it was to be gathered that there was not as yet any one method applicable to all cases of trigeminal neuralgia alike, but that much could be done to relieve the sufferings of the patients.

A New Method of Inhibiting the Action of X Rays and Radium.

Following up a series of experiments on plants, Dr. Gottwald Schwarz has described in a paper read before the Gesellschaft der Aerzte observations made by him with regard to a method of increasing the penetrating power of the X rays without injuring the skin. He said that practitioners using the rays could not help feeling that a more decided effect might be produced on the disease if more rays could be sent into the deeper structures without harm to the superficial layers. He had found that vegetable seeds in their stage of inactivity were unaffected by exposure to X rays on an enormous scale; but as soon as the process of metabolism had begun a very small exposure was sufficient to produce effects of the nature of disturbance. Dr. Schwarz concluded that the degree of the metabolism of a living tissue was very important in regard to its permeability for the rays. He treated an extensive nævus by means of a radium capsule, which in one instance was placed loosely on the nævus, whilst the next time the area adjoining the nævus was covered by the capsule under pressure exerted by means of a tight bandage. In this way the skin was made anæmic and the metabolism was so to say stopped. The difference in reaction was most marked. The area exposed without pressure was after four weeks the seat of intense inflammation with consecutive desquamation and atrophy of the vessels, whereas the area exposed under pressure did not at any time show more than a slight hyperæmia. A similar observation with X rays had a similar result. A boy suffering from trichophytosis was treated by exposure to the rays. One area was covered by a thin plate of wood, another area of equal size was exposed to the same tube at the same time, but it was covered by an equal-sized plate of wood which was pressed firmly against the bone by means of attached weights. After the lapse of 17 days from the exposure the area with pressure exerted on it was just the same as before, but the control area was free from hair. Dr. Schwarz believed that pressure was only one means of lowering or stopping the process of metabolism locally. Freezing could also be used, but more observations were necessary for ascertaining the best methods of procedure.

The Contest between Medical Organisations and the State.

Various medical organisations have lately in several instances caused certain medical appointments to be boycotted, and the corporations thereby affected, which are mostly clubs, have appealed to the law courts against this method of counteracting their machinations. These appeals having elicited judicial decisions unfavourable to the medical profession, the Reichsverband Oesterreichischer Aerzte-Organisationen (Union of Austrian Medical Organisations) has now been induced to take the matter in hand, and has forwarded to the Ministry of Justice a resolution containing explanations as follows: "A boycott has been defined as an appeal to practitioners to refrain from competing for an appointment which has become vacant for one of the three following reasons: (1) dismissal of a medical practitioner from the position in question without sufficient cause being assigned; (2) resignation of a practitioner on the ground of inadequate remuneration, so that the acceptance of the appointment by another man would mean underselling; and (3) differences of opinion between the practitioner and corporation on points of principle or for motives of a social or ethical nature. These three conditions have been consented to by all representative bodies of the profession in Austria and cannot be interfered with by legislation, as a simple appeal from one group of medical men to another group cannot be prohibited." The organisation has taken care to eliminate all coercive measures from its programme as regards the boycott, so that the authorities or magistrates may have no pretext for interference, whilst the sense of common interest is already strong enough amongst the profession to make every practitioner understand the words of Virgil: "Nam tua res agitur." The result has been that in three instances already the union has succeeded in securing for its members adequate remuneration from public bodies, because it was found that other conditions than those insisted on by the union could not induce any regular practitioners to accept the vacancy in spite of the assistance given by the state to the other side.

June 28th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending May 15th show 4578 deaths, compared with 4279 in the week preceding. Bombay Presidency reported 446, Bengal 263, the United Provinces 758, the Punjab 2786, Burma 39, and Rajputana 249. Plague has at last appeared in the Kangra Valley, where 17 cases with 13 deaths occurred during the week ending May 8th.

Lauder Brunton Lancets.

In an official report published by the Lieutenant-Governor of the United Provinces some interesting details are given regarding the use of the Lauder Brunton lancets and permanganate of potash for the cure of snake-bite. The results vary a good deal in character. In Meerut district the lancets were used in 235 cases and success followed in 171 of these, but it is not certain that in all these cases the bites were those of poisonous snakes; in 22 cases the patients died. In Barabanki four cases were successfully treated and in two of them the snakes were seen to be cobras. Other districts report success in several cases, but the returns are not so trustworthy, as it was not always proved that the snakes were venomous. The Commissioner of Agra reports that the villagers are afraid of the lancet and prefer their own methods of treatment, while one magistrate says there *is general complaint that the lancets are not sharp* enough to make proper incisions where the skin is hard.

Malarial Fevers in Bengal.

Malaria has lingered in Bengal far beyond the cold weather, and the Government has now resolved to extend even further the State supply of cheap quinine through various local agencies. The plan adopted in the Punjab is being followed, as good results have been gained in that province.

The Central Research Institute at Kasauli.

Perhaps it is not so widely known as it should be that the Pasteur Institute at Kasauli serves as the provincial laboratory of the Punjab, and as such does a large amount of useful as well as important work. Last year 675 specimens of various kinds were examined, including 457 cases for serum diagnosis for both typhoid and Malta fevers, 69 of examination of blood for malaria parasites, 62 of examination of sputum and other discharges for tubercle bacilli, and 32 of examination of tumours. The total number was less than in previous years, owing to orders having been issued from army headquarters, medical division, that all specimens from military hospitals were to be sent to the brigade or divisional laboratory concerned, and that only those in connexion with rabies were to be forwarded to the Pasteur Institute. It is stated that the majority of the specimens sent to the laboratory in past years had come from military medical officers. The director of the institute hopes that "in course of time the civil surgeons of the Punjab will recognise that a laboratory exists for their own special use."

The Indian Medical Service.

Important despatches have passed between the Viceroy and the Secretary of State regarding the proposed restriction of the Indian Medical Service in order to promote the growth of an independent medical profession in India. The Government of India, in reply to a communication from the Secretary of State, has pointed out the various difficulties in the way of taking the step indicated, but it does not consider the difficulties insuperable and, providing the war reserve of officers of the Indian Medical Service and the attractiveness and efficiency of the service are not interfered with, it is prepared to recommend that candidates from outside should be appointed to posts at present filled by the Indian Medical Service. The Secretary of State expresses satisfaction that the Government of India favours his suggestion. He states that he has "decided that the time has now arrived when no further increase of the civil side of the service can be allowed, and when a strong effort should be made to reduce it by gradually extending the employment of civil medical practitioners recruited in India." In directing the Government of India to consider what appointments can best be filled in this way, Lord Morley lays down the following specific instruction: "When it is found impossible to obtain a man from outside the I.M.S. to fill a particular new civil appointment, or one which has not previously been so filled, I will not object for the present to that service being drawn upon, but the vacancy so caused must be filled from outside it—i.e., no appointment must be made in succession which would involve an addition to the cadre of the I.M.S." The Government of India is asking the opinions of provincial Governments on the subject, and will subsequently make recommendations to the Secretary of State as to the methods by which the proposals shall be carried out.

Indian Medical Service Study Leave.

The regulations regarding the grant of study leave to officers of the Indian Medical Service, as published in the Department of Military Supply, Notification No. 16 of 1907, are reconstructed as follows: Study leave may be taken at any time, but will not be granted more than twice in the course of an officer's service. This restriction does not, however, apply to an officer who has part of his furlough converted into study leave under Rule 8. Officers on furlough, or other leave, who wish to have part of it converted into study leave, should address the Under Secretary of State, India Office, and should attach a statement showing how they propose to spend the study leave. Similarly officers on furlough or other leave who desire to have it extended for the purpose of study should address the Under Secretary of State, but in addition to the statement of the proposed study, they must support their applications with documentary evidence of their having obtained the approval of the authorities concerned in India to their applying for an extension of leave.

May 25th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Opium Smoking.

THE police are very active in endeavouring to detect illicit traffic in opium, and raids on Chinese and on vessels arriving from the East are of daily occurrence. The drug has become so valuable that many Europeans are engaged in the smuggling operations. According to police statements opium is now very scarce in Victoria. A pipeful costs from 1*s.* to 1*s.* 6*d.*, while a 1-pound tin will fetch £4. Most of the old evil dens in the Melbourne slums are now no longer existent.

Sanatorium Treatment.

Dr. Norris, chairman of the Board of Public Health of Victoria, recently stated that at the Greenvale Sanatorium for Consumption (a Government institution near Melbourne) 868 patients had been received from May, 1905, to December, 1908. In about 60 per cent. of these cases the disease was arrested or the patient's condition much bettered, 14 per cent. were discharged as incurable, and at least 30 per cent. fully regained their health. The death-rate from consumption is stated by Dr. Norris to have fallen in this period from 11·76 to 9·58 per 10,000 over the whole State. In Melbourne the fall is from 15·5 to 11·6; in Ballarat from 16·00 to 10·49; and in Bendigo from 22·01 to 20·24. The latter centre is a consumptive resort and also a large contributor to deaths from miners' phthisis.

Milk Standard.

For a long time the Victorian dairymen have been dissatisfied with the 3·5 per cent. standard of butter fat in milk. [illegible] this standard. [illegible] of the present [illegible] to urge the [illegible] to something below the present standard.

Municipal Sanitation.

Wrightville is a small municipality near Cobar in New South Wales. The Board of Public Health recently notified the local council that a pan system of night-soil disposal would have to be established. The councillors declined to consider the matter and resigned in a body as a protest against interference in their affairs.

Obituary.

The death of Dr. John Thomson of Brisbane removes one of the oldest and best known figures in the medical profession of Queensland. Dr. Thomson was a graduate of the University of Edinburgh and a very old resident of Brisbane. He was surgeon to the hospital and principal medical officer of the Queensland military forces, besides holding many public positions of trust. He was President of the Australasian Medical Congress which assembled in Brisbane some years ago. The late Dr. Thomson possessed a genial personality, as well as sound professional insight and skill, and was very popular wherever he went. One daughter, Dr. Jean Thomson, is also a member of the medical profession and practising in the northern capital.

Medical Bill.

The medical profession in Queensland recently approached the Premier with a request that a Medical Bill should be introduced into Parliament to remedy many existing abuses. At present the question of registration is very unsatisfactory, and a practitioner may be registered after three years' study. The Premier promised to endeavour to meet the wishes of the deputation.

Drink Legislation.

Mr. Lesina, M.L.A., of Queensland, has recently returned from visiting New Zealand and says, with respect to liquor legislation in the Dominion: "In spite of passing 13 Acts, each more drastic than the last, prohibitionists are still asking for new enactments. A curious fact is that as the number of licences is decreased the convictions for drunkenness increased, and there has been gradual increase in the annual drink bill since 1895. Sly grog shops are encouraged by this legislation, and a system of perjury and police corruption has resulted which is very undesirable. Lunacy is increasing and there is a general disrespect for the law." Mr. Ranking, P.M., who was specially deputed to report on the matter for the Queensland Government, has reviewed the liquor legislation from an industrial standpoint. From the social aspect much might be said on both sides for the operation of the no-licence system. He draws the conclusion that it would be unwise to adopt the New Zealand system pending a more extended experience of its effects.

Ploughing Bee.

A somewhat novel method of obtaining funds for a hospital was adopted by the Casterton (Victoria) committee. The president induced the committee to lease 25 acres of land and then arranged with a number of neighbouring farmers to plough and sow it. 25 teams turned to the ploughing operations, which were completed in a single morning.

Melbourne Hospital.

After a good deal of hesitation the committee has consented to a request from the medical staff to construct the new hospital on a 400 bed basis, but the equipment of beds will only be proceeded with as future income may determine. The present building accommodates about 300. Another proposal from the staff has given rise to some newspaper controversy. The Melbourne Hospital has hitherto been without special departments for aural, throat, or eye work. There has likewise been no special gynæcological department. Instruction in these subjects has been obtained by students at the Eye and Ear and the Women's Hospitals. It is now pointed out that this arrangement is unsatisfactory, and the staff have requested that specialists in these subjects be appointed to the out-patient department. This request has been opposed by the committees of the two special hospitals named, and the treasurer is likely to be approached to insist on the Melbourne Hospital remaining as at present, on the ground that the new departments would constitute overlapping of hospital provision. At the recent Congress a committee was appointed to request the Government to appoint a charities board to prevent overlapping, and advantage is being taken of this attitude by those interested in the special hospitals. It is probable that a compromise of some kind will be effected, as it appears obviously absurd that the great teaching institution of the University should not be self-contained in all special departments.

May 19th.

Obituary.

DANIEL JOHN CUNNINGHAM, M.D. Edin. & Dub., F.R.C.S. Edin. & Irel., D.C.L. Oxon., F.R.S.,

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF EDINBURGH.

By the death of Professor Cunningham the University of Edinburgh has lost perhaps the most distinguished member of its medical faculty. The illness which terminated fatally on June 23rd began early last winter and rendered him unable to perform his professorial duties. In the hope of regaining health he went to Egypt in December. His condition was, however, not ameliorated by the change of climate, for while there he continued to suffer much pain. He left Egypt at the end of March and from the time of his return to Edinburgh he was confined to bed. He became steadily weaker until he died. His illness was anxiously watched by the whole profession in Edinburgh, while the hopelessness of the outlook and the knowledge that the illness was associated with much suffering elicited a widespread and a deep sympathy with him and with his family.

Professor Cunningham was in his sixty-first year at the time of his death, and before the appearance of the malady which led to his death he had the aspect of a man with the expectation of many years of vigorous life. He was, what is called in Scotland, a "son of the Manse," his father at the time of the son's birth being parish minister of Crieff, while later he became Principal Cunningham of St. Andrews. Professor Cunningham graduated in medicine at Edinburgh in 1874 with first-class honours, and two years later took his M.D., receiving a gold medal for his thesis on "The Anatomy of the Cetacea." At this time he was promoted from junior to senior demonstrator of anatomy under Sir William Turner. This position he held for six years, while at the same time he lectured on physiology at the Royal Dick Veterinary College. In 1882 he went to Dublin to fill the chair of Anatomy at the Royal College of Surgeons in Ireland, and at the end of the following year he was transferred to a similar position in Trinity College. In Dublin he at once began to make himself felt in the improvement and shaping of medical education, and raised his own department to a high level of efficiency. At the same time he contributed largely to the literature and made important additions to the knowledge of human and comparative anatomy. His "Manual of Practical Anatomy," written when in Dublin, has for many years been largely used by medical students in every school, especially by those who were determined upon an honours course. In the London schools it has become the standard text-book for the dissecting-room. To many students accustomed to the older manuals it came almost as a new revelation of anatomy, for both by the clearness—we might almost say the eloquence—of its descriptions and by its admirable directions for dissection it rendered readily accessible those difficult regions of anatomy which had rarely been thoroughly explored by the "average student." The section dealing with the abdomen is in itself sufficient to warrant this praise, both the arrangement of the peritoneum and the topography of the viscera being described in such a manner as to render their visualisation a comparatively simple matter after they had once been dissected under the guidance of the manual. The arrangement of the pelvic fascia and the dissection of the neck and brain are dealt with in an equally masterful manner, and we can hardly call to mind any text-book which has been, and will continue to be, of such practical assistance to a very large number of medical students. In 1902 the "Text-Book of Anatomy" appeared under his editorship. Amongst his more original works were his "Report on Marsupialia Collected during the Voyage of H.M.S. *Challenger*," "On the Lumbar Curve in Man and Apes," "On the Surface Anatomy of the Cerebral Hemispheres," "A Research into the Relation between Giantism and Acromegaly," and "A Memoir on the Microcephalic Idiot." He was an editor of the *Journal of Anatomy and Physiology*.

In 1903, on Sir William Turner's appointment as Principal of the University of Edinburgh, Professor Cunningham was offered the chair of Anatomy thus vacated. The offer was accepted and Professor Cunningham returned to the scene of his early work and to the chair of his former chief. His return was cordially welcomed on account of his distinction as an anatomist and his character as a man. In Edinburgh he took a leading part in the medical faculty of the University, of which he was for some years Dean. He had ideas and schemes regarding the school which had begun to get beyond the speculative stage, and his tactful handling of them will be missed. During the brief period of his occupancy of the Edinburgh chair he was one of the commissioners sent out to inquire into the medical administration during the South African war, and more recently he took a leading part in arranging the medical administration in Scotland of Mr. Haldane's scheme for the establishment of the Territorial Force. Professor Cunningham's attainments and work were more fully recognised than falls to the lot of most men, but his remarkable attainments and qualities were deeply impressed upon all who knew him. He was a Fellow of the Royal Society; he held the honorary degrees of M.D. and D.Sc. of Dublin, of D.C.L. from Oxford, and of LL.D. from both St. Andrews and Glasgow. He was at various times secretary, Vice-President, or President of the Royal Zoological Society of Ireland, of the Anthropological Section of the British Association, of the Royal Dublin Society, and of the Royal Society of Edinburgh. His was truly a life full of excellent work and of well-merited reward. He has left a mark on the two great medical schools of Dublin and Edinburgh, with which they may justly be gratified and which may be looked on as having the measure of endurance which belongs to work done as Cunningham did his. His influence was great and on every side good. Along with a quiet resoluteness of purpose he was simple and gentle in manner, kindly and friendly to all. He gained the mastery by tact and gentleness and persuasiveness, and appears never to have made an enemy.

He was a loyal and devoted friend, and his friends were devoted to him. Seldom has a death occurred in the profession in Edinburgh where the sense of personal loss has been wider and deeper than it has been at Cunningham's premature loss, and much sympathy is felt for Mrs. Cunningham and his family.

On Saturday, June 26th, the funeral took place, the interment being in the Dean Cemetery, where very many of those who once were prominent in Edinburgh life are also buried. On Sunday a memorial service was held in St. Giles's Cathedral, when the Rev. Professor Kirkpatrick, D.D., Dean of the Faculty of Divinity, preached from the text: "Clouds and darkness are round about Him; righteousness and judgment are the habitation of His Throne." The preacher said that no man was held by his colleagues in the Senatus in higher honour or warmer affection than Cunningham. "The bright and sunny temperament, the warmth of heart, the transparent simplicity that was unconscious of its own greatness, the nameless grace that was the index of beauty of spirit, endeared him to all with whom he came into contact. No one could associate with him for a little without carrying away an indelible impress of a singularly lovable personality."

An Irish correspondent writes: "The announcement of the death of Professor Cunningham has probably nowhere produced such uniform sorrow as in the Irish metropolis, which was privileged to enjoy his genial presence and enlightened teaching during a large part of his professional career. His appointment to the duplex Chair of Anatomy in the Royal College of Surgeons in Ireland in 1882 marked the initiation of a new epoch in the teaching of anatomy in Dublin. Dublin had always been noted for its facilities for the acquisition of anatomical knowledge, for Ireland out of her poverty has supplied liberally the anatomical schools of her metropolis with ample material for research in human anatomy. But at the time of Professor Cunningham's arrival a system of 'cramming' had sprung up especially in the private schools of the city, a system which had its origin in the exigencies of supplying rapidly a medical service of some sort for the British troops in the Crimean war. It is true that the leading anatomists in Dublin knew and taught their science at least as well as it was taught anywhere else in the world. But a great deal of corruption had crept in, and the skill of the grinder was a great temptation to the 'chronic' to expend as little of his own intellectual energy as possible in the acquisition of the modicum of knowledge required to satisfy the Board of Examiners. Professor Cunningham set himself at once to extinguish the methods of private tutors and copious dissecting-room demonstrations, and encouraged the student to attend the authorised lectures and to secure his practical knowledge by his own investigation of the subject. 'Practical work' became the scientific watchword of the period, and the teaching of the Dublin school was completely revolutionised on the appointment of Sir Lambert Hepenstal Ormsby as examiner in anatomy soon after the election of Professor Cunningham. A great many changes have occurred in consequence of the modifications of teaching and practice introduced by Professor Cunningham and Sir Lambert Ormsby; and the 'private schools' have all vanished. The accomplished Scotch anatomist stayed but a short time in the school which so rapidly learnt to appreciate his value, but he left behind him an ineffaceable record of work which gained him so speedily the chair of Anatomy in Dublin University."

EDMUND MARSHMAN RUSSEL RENDLE,
M.R.C.S. ENG., L.S.A.,

CONSULTING SURGEON TO THE ROYAL PLYMOUTH EYE INFIRMARY.

Mr. E. M. Russel Rendle died at his residence, Caton, Ivybridge, Devon, on June 23rd, in his seventy-seventh year The deceased was the son of the late Dr. E. Rendle of Plymouth. He was educated at Glenalmond School, and received his medical education at King's College Hospital, London. He qualified M.R.C.S. Eng. and L.S.A. in 1854 and 1853 respectively, and shortly afterwards joined his father, who was then in partnership with the late Mr. Joseph Square at Plymouth. Mr. Rendle was for many years on the staff of the Plymouth Public Dispensary, but it was in connexion with the Plymouth Royal Eye Infirmary that his chief honorary surgical work was done. He was greatly devoted to the institution, and from 1866 to 1893 he was honorary surgeon. He then became a member of the consultative staff, and in 1896 his long and valuable services were recognised by his election to the presidency of the charity. For many years Mr. Rendle was honorary medical officer to the Devon and Cornwall Orphan Asylum. He was at one time surgeon to the old South Devon Militia, now the 3rd Devonshire Regiment. Outside his professional work he took a great interest in the well-known newspaper, the *Western Morning News*. Early in the history of that paper he became one of the directors and was a managing director until 1902, when he retired. Mr. Rendle was a prominent figure in the estimation of the "Three Towns." As a practitioner his judgment was sound, and his skill of no mean order. He was always particularly kind to his poorer patients and was beloved by a large and varied number of friends, and acquaintances. He retired from practice ten years ago, and five years ago he left Plymouth to reside at Ivybridge.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Thumm, Privy Councillor and physician to the Children's Hospital at Pforzheim, who was 82 years of age, suddenly from apoplexy while at the bedside of a patient.—Dr. Alfredo Thomé de Britto, professor of medical diagnosis in the University of Bahia.—Dr. Wilhelm Muller, formerly professor of pathological anatomy in the University of Jena.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—E. W. Archer (Sections I. and II.), St Mary's Hospital; [illegible] Archer, St. Mary's Hospital; J. M. Burke, Middlesex Hospital; J. H. Clarke, St. Mary's Hospital; and H. O. West, King's College Hospital.

Midwifery.—E. W. Archer, R. J. Cyriax, and G. Holmes, St. Mary's Hospital; and H. O. West, King's College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—E. M. Adam, E. W. Archer, J. Bramley-Moore, J. H. Clarke, L. Ettinger, J. A. Koch, P. N. Panton, and H. O. West.

UNIVERSITY OF CAMBRIDGE.—At the First Examination for medical and surgical degrees held recently the following candidates were successful in the subjects indicated:—

Part I., Chemistry and Physics.—M. L. Atkinson, Emmanuel; H. Bartlett, Caius; F. R. Boswell, Queens'; C. W. Bower, Caius; H. F. Brice Smith and M. Chadwick, *St. John's*; V. M. Coates, Caius, G. R. E. Colquhoun, Trinity; L. P. Costobadie, Caius; D. D. Evans and L. H. B. Evans, King's, B. J. L. Fayle, Emmanuel, L. A. Graham, Caius, G. L. Grant, Queens'; J. Hardy, Caius, R. J. Hearn, Jesus, J. H. Jordan, Emmanuel; W. H. Livens, Christ's; O. C. McCaw, Caius; J. B. McFarland, Sidney Sussex, F. W. Maunsell and S. H. Miles, Clare, H. L. Milsom, Trinity; G. Miskin, Caius, H. R. Pollock, Trinity, G. D. Read, St John's; A. P. Saint, Downing, C. H. Savory, Trinity, J. W. Sewill, Clare, [illegible] J. R. Stoddart, [illegible] broke, D. C. L [illegible]

[illegible] Cowper, Trinity, D. Crellin, C. Cunnington, Corpus Christi; [illegible] bson, Queens'; H. Dunkerley, Downing; A. T. Edwards, St. John's, D. D. Evans and L. H. B. Evans, King's; J. M. Evatt, Caius, B. J. L. Fayle, Emmanuel, L. S. Fry, King's, E. A. Gibb, Emmanuel, C. L. Gimblett, Caius; G. L. Grant, Queens', R. Hargreaves, Caius, R. J. Hearn, Jesus; J. H. Jordan, S. D. Kilner, and A. A. Lees, Emmanuel; W. H. Livens, Christ's, W. A. H. Lowry, Caius; W. M. Lupton, Clare; F. W. Maunsell, Caius, S. H. Miles, Clare, G. Miskin, Caius; C. C. Okell, St. John's, G. Y. Oliver, Magdalen; H. B. Padwick, Emmanuel; J. S. Pooley, Trinity; G. D. Read, St. John's; J. R.

Rees, King's; A. P. Saint, Downing; R. P. A. Starkie and R. Stott, Trinity; M. Tin, Downing; E. W. Todd, Trinity; D. C. C. Vey, Clare; T. T. B. Watson, Christ's; G. H. Wells-Cole, Caius; A. M. Wheeler, Sidney Sussex; and H. G. Wiltshire, Emmanuel.

TRINITY COLLEGE, DUBLIN.—At examinations held recently the following candidates passed in the subjects indicated:—

FINAL EXAMINATION IN MEDICINE.

Part II., Surgery.—Thomas A. Hughes, Ralph T. St. J. Brooks, David Duff, Eric J. Powell, John D. Kernan, George E. Craig, Edwin B. Bate, Frederick R. Sayers, David J. Miller, Frederick G. Anderson, Charles G. S. Baronsfeather, James P. S. Dunn, Wellesley R. Allen, and Denis J. Stokes.

M.Ch. Degree.—J. Singleton Darling.

M. Dent. Sci. Degree.—Ernest S. Friel.

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—John Colgan, Jacobus M. S. Gericke, Frederick B. M'Carter, Eileen Hewitt, Hubert T. Bates, Robert A. Flood, James N. Armstrong, Georgina Revington, Robert G. Ball, Dorothy K. Milne, William E Featherstonhaugh, Edwin F. O'Connor, Jerome H. Counihan, Jevan H. Powell, Arthur P. Draper, Hugh G. Trayer, Robert H C. Lyons, Cecil Rutherford, William Frier, Oswald V. Burrows, James H. Grove-White, Richard L. Grandy, Antonie C. Redelinghuys, Humphry L. Blackley, Hugh E. Williams, and Frederick A. Burke.

Purser Medal in Institutes of Medicine.—Jacobus M. S. Gericke.

Medical Travelling Prize and Banks Medal.—Albert Stals.

Banks Prize.—John L. Phibbs.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Professor Neuberg, assistant in the Chemical Department of the Pathological Institute, is resigning his post in the Medical Faculty, having been appointed to the charge of the Chemical Department in the Veterinary School.—*Budapest:* Dr. Némath has been recognised as *privat-docent* of Forensic Mental Pathology.—*Greifswald:* Dr. Heinrich Gebb, assistant in the Ophthalmological Clinic, has been recognised as *privat-docent* of Ophthalmology.—*Halle:* Dr. Hermann Schmidt-Rimpler, who is now more than 70 years of age, is resigning the Professorship of Ophthalmology. The names of two ophthalmic surgeons have been published as having been appointed to the chair. Whether the duties of the chair are to be divided or whether one of the announcements was made in error does not as yet seem clear.—*Hamburg:* Dr. Friedrich Jessen, formerly physician to a hospital in Hamburg but now practising at Davos, has been granted the title of Professor.—*Heidelberg:* Dr. H. Kossel, Professor in the University of Giessen, has been appointed Professor of Hygiene.—*Innsbruck:* Dr. Alfred Decastello Ritter v. Rechtwahl has been recognised as *privat-docent* of Medicine. Dr. E. von Hibler, *privat-docent* of Pathological Anatomy, has been promoted to an Assistant Professorship.—*Leipsic:* Dr. Paul Sick has been recognised as *privat-docent* of Surgery.—*Prague (German University):* Dr. Friedrich L'ippich has been recognised as *privat-docent* of Physiology. (*Bohemian University*): Dr. Tobiasek has been recognised as *privat-docent* of Orthopædic Surgery.—*Rio de Janeiro:* Dr. Miguel Pareira has been appointed to the chair of Clinical Medicine.—*Rostock:* Dr. Brüning, *privat-docent* of children's diseases, has been promoted to an Extraordinary Honorary Professorship.—*Strasburg:* Dr. Kieffer has been recognised as *privat-docent* of Odontology.—*Tübingen:* Dr. E. Letsche, assistant in the Physiological Institute, has been recognised as *privat-docent* of Physiological Chemistry.—*Vienna:* Dr. Ludwig Teleky has been recognised as *privat-docent* of Social Medicine.

SCARLET FEVER AND MILK IN THE THAMES VALLEY.—The public health committee reported to the London County Council on June 29th with reference to certain cases of scarlet fever notified by the medical officer of health of Westminster which he suspected might be attributed to infected milk-supply. Other local outbreaks were notified in Chelsea and Wandsworth, and at Kingston-on-Thames and other parts of Surrey. The cases appeared to be traceable to the same wholesale supply, the company were communicated with, and they stopped the supply from the suspected depôt. On June 20th Dr. W. H. Hamer and Dr. E. Seaton, medical officer of health of Surrey, met the manager of the company and proceeded to a particular farm—the only one from which milk had been supplied to all the localities known to be involved. Inquiries disclosed the fact that five recent cases of scarlet fever had occurred in a family the members of which had consumed milk from the farm, one of the persons affected being employed at the farm. All possible steps had been taken to prevent further infection. The committee retained the services of Dr. Mervyn H. Gordon, of St. Bartholomew's Hospital, to undertake any bacteriological examinations necessary.

THE CHILDREN'S CONVALESCENT HOME, WESTON-SUPER-MARE.—The annual meeting of the subscribers to this institution, which is a branch of the Bristol Children's Hospital, was held at Weston-super-Mare on June 15th, under the presidency of Lady Smyth. The medical report stated that during 1908 323 children had been admitted. The financial statement showed an adverse balance of £87.

UNITED HOSPITALS ATHLETIC CLUB.—The United Hospitals Athletic Club's annual championship meeting took place at the Stamford-bridge ground on June 23rd, when London Hospital won the challenge shield with 59 points, Guy's Hospital being second with 55 points, and St. Bartholomew's Hospital third with 29 points. The 100 yards, high jump, throwing the hammer, long jump, and quarter mile events were all won by London Hospital.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on June 18th. There were present: Dr. F. de Havilland Hall (in the chair) Dr. J. Pickett, Dr. J. W. Hunt, Dr. St. Clair B. Shadwell, Mr. J. Brindley James, Dr. W. Knowsley Sibley, Dr. W. G. Dickinson, Dr. Frederick S. Palmer, Mr. F. S. Edwards, Dr. W. A. Dingle, Mr. H. P. Symonds (Oxford), Dr. F. J. Allan, Dr. M. Greenwood, Mr. J. F. Colyer, Mr. E. Bartlett, and Dr. J. B. Ball.

A FALSE DECLARATION OF STILLBIRTH.—An anonymous letter recently called attention at Greenwich to the case of a newly born child whose father had signed a declaration for the purpose of burial to the effect that the child was stillborn. The exhumation of the body followed, and medical evidence at the inquest held by Dr. H. R. Oswald showed that the child apparently had had a separate existence and breathed well, but subsequently had died from suffocation. One of the witnesses was an uncertified woman practising as a midwife who admitted having told the undertaker in the father's presence that the infant was stillborn, although, in fact, it was to her knowledge born alive. It was also apparent from the father's evidence that he wilfully deceived the Registrar. The jury returned a verdict of "Death from accidental suffocation."

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 24th, Dr. F. H. Champneys being in the chair. The following charges alleged against the midwife Emma Pitman were considered:—That having been in attendance as a midwife at a confinement on Jan. 2nd, 1909, and following days, she falsely entered in her register of cases that her last visit was on Jan. 12th, and that the condition of the mother was then good, whereas in fact she was in attendance on the mother until her death on Jan. 14th. Also that being in attendance as a midwife at a confinement, the patient suffering from persistently offensive lochia with abdominal tenderness and a rise of temperature above 100·4° F., she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that it might be immediately forwarded to the medical practitioner, as required by Rules E. 18 and 19. A[illegible] case the Board severely censured this [illegible] charges alleged against the midwife Eliza Thompson were considered:—That being in attendance as a midwife at three confinements, and having advised in each case that medical aid should be summoned, she failed to notify the local supervising authority thereof, as required by Rule E. 20, and that she habitually neglected, after repeated warnings, to do so. After deliberating on the case the Board censured this midwife. At the ordinary meeting of the Board held on the same day, the following business, *inter alia*, was transacted. A letter from Dr. J. C. Thresh, county medical officer of Essex, as to the refusal of medical practitioners in a country district of Essex to attend when summoned on the advice of a midwife was further considered. A letter on the same subject was considered from Mrs. Gifford, honorary secretary of the Aldham, Copford, and Mark's Tey Nursing Association. The secretary, Mr. Duncan, was instructed to write that the Board reply that no blame can attach to the midwife if she strictly carries out the rules of the Board as to summoning medical assistance.

Gift to the London Hospital Medical College.—The London Hospital Medical College Endowment Fund has received a gift of £2000 through the kindness of Mr. Luther Martin, an old student of the college.

At the annual general meeting of the *London Nottinghamshire Society*, held on June 24th, Mr. Sydney Stephenson was elected president of the society for 1909-10.

The Workmen's Compensation Act.—In a compensation case heard at Newton Abbot (Devon) county court recently Judge Lush-Wilson said that even if a man had an inherent defect, such as heart disease, before an accident the employer was still liable.

The Colonial Nursing Association.—The annual meeting of this association was held at the invitation of Lady Wantage at 2, Carlton-gardens, Carlton House-terrace, W., on June 24th, when Princess Christian of Schleswig-Holstein was present. Sir Albert Hime presided in the unavoidable absence of Lord Ampthill, the President. In his plea for additional help, which is urgently required to extend the good work done by the association, the chairman remarked that the total number of nurses employed during the year was 209, of whom 62 were employed as private nurses and the remainder in Government institutions. Colonel Seely (Under Secretary of State for the Colonies), in moving the adoption of the report, paid a warm tribute to the help of Mr. and Mrs. Chamberlain. The Colonial Office, he said, had reason to be especially grateful to the association, which relieved the Government officials of the very difficult task of selecting candidates for nurses in the colonies. Colonel Sir Percy Girouard seconded the motion, and was supported by Sir H. H. Bell. The report having been carried, Sir Alfred Jones, in proposing a vote of thanks to Princess Christian for her presence, remarked that he himself would pay the deficit of £111 which was shown on the balance sheet.

Literary Intelligence.—Messrs. Rebman, Limited, announce a new book on "Accidental Injuries to Workmen with Reference to Workmen's Compensation Act, 1906," by Mr. H. Norman Barnett, with an article on Injuries to the Organs of Special Sense by Dr. Cecil E. Shaw, and a legal introduction by Mr. Thomas J. Campbell. In view of the very grave responsibility which the Act places upon medical men, and the importance of a report being correct as to diagnosis and accurate as to prognosis, a chapter has been devoted to the making of reports. Messrs. Rebman have also just issued Professor de Giovanni's "Clinical Commentaries Deduced from the Morphology of the Human Body," translated from the Italian by Mr. John J. Eyre of Rome, and the sixth edition of Mr. J. Bland-Sutton and Dr. A. E. Giles's well-known little book on the Diseases of Women, a handbook for students and practitioners. The same publishers also state that they have almost ready for immediate publication the English translation of Professor Eugenio Tanzi's "Text-book of Mental Diseases," which has been prepared by Dr. William Ford Robertson of the Scottish Asylums, Edinburgh, and Dr. T. C. Mackenzie of the Inverness District Asylum.—Messrs. Baillière, Tindall, and Cox announce that on and after July 1st they will take over the publication of all the books by Sir William Whitla, including "Materia Medica," "Practice of Medicine," and his well-known "Dictionary of Treatment," a new edition of which will be issued in the autumn. They will also in future publish Green's "Pathology and Morbid Anatomy," a tenth edition of which is now in circulation. These changes are the result of the retirement from business after more than 40 years' work of Mr. William Renshaw, the head of the old-established firm of Henry Renshaw, which will now cease to exist. Messrs. Baillière, Tindall, and Cox have also the following new works and new editions in active preparation: Dieulafoy's "Text-book of Medicine," translated by V. E. Collins, M.D. Lond; "Manual of Massage," by M. A. Elliston, L.O.S., third edition; "Practical Microscopy," by F. Shillington Scales, F.R.M S., second edition; "Aids to Analysis of Food and Drugs," by C. G. Moor, F.I.C., and W. Partridge, F.I.C., second edition; "Sanatorium Treatment of Tuberculosis," by Rufenacht Walters, M.D.; "Surgical Anæsthesia," by Bellamy Gardner, M.R.C S.; "Aids to Mathematics of Hygiene," by R. Bruce Ferguson, M.D., third edition; "Chemical Notes and Equations," by G. H. Gemmell, F.I.C., second edition; "Gynæcological Therapeutics," by S. J. Aarons, M.D.; "Incidence of Sex and Age on Disease," by J. Grant Andrew, F.F.P.S.; "Menstruation and its Disorders," by Arthur E. Giles, M.D., second edition; also a reprint of the second edition of "Minor Maladies," by Leonard Williams, M.D.

United Services Medical Society.—There will be no meeting of this society in the month of July. The next meeting will take place at the Royal Army Medical College, Millbank, S.W., on Wednesday, Oct. 13th, 1909.

St. John's Hospital for Diseases of the Skin.—The Chesterfield medal in Dermatology issued by St. John's Hospital for Diseases of the Skin, Leicester-square, London, W.C., has this year been awarded to Dr. C. A. McBride.

A Tuberculosis Exhibition at the White City.—Preparatory to the opening of tuberculosis exhibitions in various centres in England, the exhibits recently shown at the Tuberculosis Exhibition at Whitechapel, which were described in THE LANCET of June 12th, p. 1710, have been taken to the White City at Shepherd's Bush.

Donations and Bequests.—Under the will of the late Mr. James Shaw of Liverpool the Accrington Cottage Hospital will receive £500.—By the will of the late Mrs. Annie Fulton the Cardiff University College will benefit to the extent of over £10,000.—The late Miss M. Hezmalhalch has left legacies of £2000 each to the Harrogate Bath Hospital and to the Harrogate Cottage Hospital, £500 to the Leeds Hospital for Women and Children, £250 to the Leeds District Nursing Institution, and £250 to the Ida Convalescent Home at Cookridge. Large sums will also be received by the Leeds Infirmary and by the Leeds Dispensary.—The late Miss Ann Hill of Peterborough has left £2000 to the Hunstanton Convalescent Home.—Under the will of Mrs. Hely-Hutchinson of Brighton the St. Bernard's Home for Invalid Ladies, Brighton, will receive £500.—The late Dr. Edward Bland of Derby bequeathed by will £500 each to the Midland Institution for the Blind, Dr. Barnardo's Homes, and the Nottingham General Hospital; £200 to the Nottingham Children's Hospital; and £100 to the Nottingham General Dispensary.—The Royal Dental Hospital, Leicester-square, which has just completed its jubilee, has received a donation of £200 from the trustees of Smith's (Kensington Estate) Charity and £26 5s. from the Worshipful Company of Mercers.—Under the will of the late Mrs. C. S. Greenhill the following amongst other legacies have been announced: £2000 to the Royal Free Hospital, Gray's Inn-road; £1000 each to the Middlesex Hospital, the Children's Hospital, Paddington Green, and the West London Hospital, Hammersmith; £200 each to the West London Hospital Ladies' Association and the Ladies' Association of the Royal Free Hospital.—The Adelaide Hospital, Dublin, and the Royal City of Dublin Hospital will each receive £500 under the will of the late Mrs. J. Wakefield of Kildare.—The committee for the removal of King's College Hospital has received £1000 from the executors of the late Mr. C. E. Layton, being the first instalment of a legacy of £2000 bequeathed to the fund to provide for the erection of a chapel in the new hospital. A further donation of £100 has also been received from Lady Hambleden, being her twelfth contribution to the fund.—The honorary secretaries of King Edward's Hospital Fund for London have received at the Bank of England, under an order of the High Court, the sum of £7348 17*s.* 2*d.*, the residuary estate of the late Mr. Thomas John Bell, bequeathed for charitable purposes.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Sale of Margarine Bill.

THE Sale of Margarine Bill has been completely transformed by a Standing Committee of the House of Commons. The clauses prohibiting the use of colouring matter in margarine were cut out, and the only one of any importance which remained was a section imposing increased penalties on persons who fraudulently sold margarine for butter. Even that section was materially altered. As passed by the Committee it reads: "Any person guilty of an offence under any Act in respect to the sale of margarine shall be liable on conviction under the Summary Jurisdiction Acts for a first offence to a fine not exceeding £20, for a second offence to a fine not exceeding £50, or in the alternative to imprisonment with or without hard labour, for a period not exceeding three months, and for a third or any subsequent offence to imprisonment with or without hard labour for a period not exceeding six months without the option of a fine."

Mr. KILBRIDE, an Irish Member, was in charge of the Bill. One of the most striking features of the debate on it was the absence of any representative of the Government departments which might have been considered to take an interest in the shaping of the Bill. It is true that Mr. T. W. RUSSELL, the Vice President of the Irish Department of Agriculture, attended. The frauds, which the Bill was designed to check, it was said, took place in England, but as this lay quite outside the scope of his department, Mr. RUSSELL refrained from offering departmental guidance to the Committee on the amendments which were put forward. On the first day of the Committee's proceedings, some lively protests were made that no representative of the Local Government Board, the Board of Trade, or the Board of Agriculture was present. On the second day the same situation arose. It was understood that each of the three departments concerned did not admit that the Bill fell within its administrative scope. Some honourable Members warmly declared that the Committee was being treated with disrespect, and although a motion was made to adjourn the sitting the majority decided to continue the proceedings and to finish the committee stage of the Bill. This course was followed.

Metropolitan Ambulances Bill.

Sir WILLIAM COLLINS made a vain appeal to the House of Commons at the time for unopposed business on June 24th to give a second reading to the Metropolitan Ambulances Bill. His object was to have the measure sent to a committee to have the machinery to give effect to an improved ambulance service in the metropolis considered. Objection being taken to the motion for the second reading, the further consideration of the Bill was postponed.

The Central Midwives Board.

The report on the work of the Central Midwives Board for the year ending March 31st, 1909, has been presented to the House of Commons.

The General Medical Council.

A copy of "The Representations of the General Council of Medical Education and Registration of the United Kingdom to the Privy Council under Section 10 of the Medical Act, 1886," has been laid on the table of the House of Commons.

Anæsthetics Bill.

The text of Mr. COOPER'S Anæsthetics Bill is now available. It has the support of Sir WALTER FOSTER, Sir WILLIAM COLLINS, Sir JOHN BENN, Mr. ACLAND ALLEN, Mr. BARNES, Dr. V. RUTHERFORD, Mr. BERTRAM STRAUS, and Mr. CARR-GOMM. Its object is to regulate the administration of anæsthetics, and, although drawn on similar lines to the Bill on the same subject recently withdrawn by Mr. COOPER, it differs from it in regard to its treatment of dentists. A memorandum attached to the Bill states that it is designed to require a medical practitioner or a dentist applying for registration on or after Jan. 1st, 1912, to submit evidence of having received practical instruction in the administration of anæsthetics, and to prohibit any person not a registered medical practitioner or a registered dentist administering an anæsthetic except under certain conditions.

Clause 1 of the Bill runs as follows: "On and after the first day of January one thousand nine hundred and twelve, no person shall be registered under the Medical Acts or the Dentists Acts in respect of any qualification referred to in any of those Acts unless he shall have produced evidence that he has received theoretical and practical instruction in the administration of anæsthetics."

The second clause relates to the penalties attaching to the administration of anæsthetics by unauthorised persons. Its text is as follows:—"Any person not a registered medical practitioner or a registered dentist who shall administer or cause to be administered to any other person, by inhalation or otherwise, any gas or vapour, or drug, or mixture of drugs, solid or liquid, with the object of producing unconsciousness during any medical or surgical operation, examination, act, or procedure, or during childbirth, shall be liable on conviction before a court of summary jurisdiction for such offence, to a penalty not exceeding ten pounds, and, in the case of any subsequent conviction, to a penalty not exceeding twenty pounds: Provided that a person shall not be liable to a penalty under this section if in conducting such administration he was acting under the immediate direction and supervision of a registered medical practitioner or a registered dentist, or if the circumstances attending the administration were such that he had reasonable grounds for believing and did believe that the delay which would have arisen in obtaining the services of a registered medical practitioner or a registered dentist would have endangered life."

Clause 4 lays down that "any registered medical practitioner who gives a certificate of death in the case of any person dying while under the influence of an anæsthetic shall be liable, on summary conviction, to a penalty not exceeding five pounds."

The Registration of Nurses.

Delegates from four organisations interested in the registration of nurses attended a conference in one of the committee rooms of the House of Commons on June 28th. As a result of their deliberations with several Members of Parliament who have taken an interest in the subject, a representative committee has been appointed whose duty it will be to undertake the drafting of a Bill embodying a scheme of registration applicable to all parts of the United Kingdom, which may be accepted by all the organisations. Lord AMPTHILL was in the chair, and amongst the Members of Parliament present were Mr. MUNRO FERGUSON, Mr. CLELAND, and Mr. FINDLAY, all of whom have been identified with various proposals for the registration of nurses. Amongst the delegates of the Society for Nurses Registration were Lady HELEN MUNRO FERGUSON, Miss HALDANE, Dr. J. WALLACE ANDERSON, and Dr. BEDFORD FENWICK. The delegates from the Royal British Nurses' Association included Dr. W. BEZLY THORNE, Dr. COMYNS BERKELEY, Mr. JOHN LANGTON, Mr. ARTHUR E. J. BARKER, and Sir WILLIAM MACEWEN. From the Association for the Registration of Nurses in Scotland came Professor J. GLAISTER (Glasgow), Dr. J. O. AFFLECK (Edinburgh), Dr. G. R. LIVINGSTON (Dumfries), Dr. J. M. THOM (Glasgow), and Dr. D. J. MACKINTOSH (Glasgow). An Irish association was represented amongst others by Lady HERMIONE BLACKWOOD. There was also a large contingent of ladies representing these organisations. Nearly two and a half hours were spent in discussing various aspects of the subject of registration. Such matters as the need for united action in the promotion of a Bill and the desirability of holding a simultaneous qualifying examination at centres throughout the kingdom were discussed at length. Ultimately the conference found itself in sufficient agreement to proceed to the appointment of a committee of 20 members—five from each association—who will undertake the drafting of a Bill. It is hoped that it may be found possible to frame it on lines which will carry the united support of the organisations which were represented. The intention is to present this measure to Parliament next year.

HOUSE OF COMMONS.

THURSDAY, JUNE 24TH.

Tuberculosis in Ireland.

M[illegible] Secretary to the Lord Lieutenant of I[illegible] in Ireland last year from tubercul[illegible] of the population; and would he give the same figures for the preceding two years.—Mr. BIRRELL replied: I am informed by the Registrar-General that the number of deaths in Ireland in 1908 from all forms of tuberculous disease was 11,293, or 2·6 per 1000 of the estimated population. The numbers in 1906 and 1907 were 11,756 and 11,679 respectively, or 2·7 per 1000 of the population.

The Pharmacy Act, 1908.

Mr. SNOWDEN asked the Secretary of State for the Home Department whether he was aware that town councils were continuing to license traders to sell poisonous preparations under the Pharmacy Act, 1908, where ample facilities existed; that the Halifax town council had licensed a firm of seedsmen for premises within 100 yards of nine [illegible]gh this firm had been successfully prosecuted [illegible] poisons; was he aware that the town council of [illegible] a trader for the purpose against the advice of the borough medical officer and borough coroner, that in this case it was admitted that existing facilities were ample, but that the application was granted on the ground that the applicant was an esteemed townsman who had been mayor of the borough; and whether he would take steps to stop this misuse of powers by town councils.—Mr. GLADSTONE answered: I understand from the Privy Council Office that it continues to receive complaints in this matter, and that it is making inquiry of the town council of Barnstaple; but I must point out that the question whether there are reasonable facilities in any district is one under the Act for the discretion of the local authority so long as it does not infringe the terms of the Act, and that neither the Privy Council nor the Home Office is empowered to interfere.

Children suffering from Favus.

Mr. RUPERT GUINNESS asked the Secretary of State for the Home Department whether children suffering from favus arriving from Russia and other Eastern countries were rejected by the Immigration Board at the Port of London.—Mr. GLADSTONE replied: During the last three years the London Immigration Boards have refused leave to land to four aliens from Russia, including one child of four years, whose parents were rejected from want of means, who had been certified by the medical inspector to be suffering from scalp disease, though in none of these cases was the disease specifically described as favus. I have no doubt that the Immigration Boards would, as a general rule, regard that disease as a proper cause for refusing leave to land.

Mr. RUPERT GUINNESS: Will the right honourable gentleman tell us whether he will consider the advisability of making it more difficult for these cases to come in in ships which are not inspected?

Mr. GLADSTONE: That is a matter which I have already under consideration.

Education (Provision of Meals) Act.

Answering Mr. SUMMERBELL, Mr. C. P. TREVELYAN (Parliamentary Secretary to the Board of Education) said that the Board had no complete statistics as to the number of education authorities who had in one way or another taken action under the Education (Provision of Meals) Act, but information was being collected on the subject. The Board had a list of the authorities who had been authorised to spend money out of the rates on the purchase of food.

MONDAY, JUNE 28TH.

Experiments on Living Animals.

Mr. GEORGE GREENWOOD asked the Secretary of State for the Home Department whether his attention had been called to the statement made by the inspector of experiments on living animals in the returns showing the number of such experiments during the year 1908 to the effect that one licensee who held Certificate B, authorising exposure to X rays and [illegible] carried out [illegible] state the n[illegible] of the expe[illegible] he proposed [illegible] tion of the [illegible] ments were 42 in number. Their nature is stated in the report and is quoted in the question. They were not of a severe character and [illegible] if the licensee had [illegible] The error of the [illegible] extent of his two [illegible] call for legal pro- [illegible]

TUESDAY, JUNE 29TH.

The Importation of Boneless Meat.

Mr. WATT asked the President of the Local Government Board whether he was aware that boxed boneless meat was not permitted as [illegible] impossibility of satisfactorily [illegible] whether he would adopt a [illegible] replied: I understand that [illegible] to Germany is not allowed. As regards this country, regulations have been made on the subject under the Public Health (Regulations as to Food) Act, 1907. Boneless pork, not being scrap meat, can only be imported if it is officially certified as having been found free from disease in the country of origin, and all scrap meat, whether pork or not, is excluded.

Chief Sanitary Officers of Crown Colonies.

[illegible]

WEDNESDAY, JUNE 30TH.

Prevalence of Scarlet Fever.

Mr. RUPERT GUINNESS asked the [illegible] Board whether he was now in a [illegible]

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., New York and London.

Orthopedic Surgery for Practitioners. By Henry Ling Taylor, M.D., assisted by Charles Ogilvy, M.D., and Fred. H. Albee, M.D. Price 21*s*. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

The Campaign against Microbes. By Étienne Burnet, M.D. Translated from the French by E. E. Austen, F.Z.S. Price 6*s*. net.

Medical Reform Measures, including the Reform of the Medical Colleges. By H. Elliot Blake, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond. Price 5*s*. net.

BOWES AND BOWES, Cambridge.

Notes from a Knapsack. By George Wherry, M.A., M.C. Cantab., F.R.C.S. Price not stated.

FUNK AND WAGNALLS COMPANY, London and New York.

Self control and How to Secure It. (L'Éducation de Soi même.) By Dr. Paul Dubois. Authorised translation by Harry Hutcheson Boyd. Price 6*s*.

GLAISHER, HENRY J., London.

Lectures on Hysteria and Allied Vaso-motor Conditions. By Thomas Dixon Savill, M.D. Lond. Price 7*s*. 6*d*. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

A Handbook of the Diseases of the Nose and Throat. By Eugene S. Yonge, M.D. Edin. Price 9*s*. net.

HEADLEY BROTHERS, London.

Centenary Biography. Oliver Wendell Holmes. By Lewis W. Townsend. Price 2*s*. 6*d*. net.

LEHMANN, J. F., München.

Lehmann's Medizinische Atlanten. Band VII. Atlas und Grundriss der Röntgendiagnostik in der inneren Medizin. Herausgegeben von Dr. med. Franz M. Groedel. Price M.24.

LEWIS, H. K., London.

Immunity and Specific Therapy. By W. D'Este Emery, M.D., B.Sc. Lond. Price 12*s*. 6*d*. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta. (**CHARITY ORGANISATION SOCIETY**, London.)

The Annual Charities Register and Digest. 1909. By C. S. Loch. Price 5*s*. net.

RICHARDS, GRANT, London.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland, F.Z.S. In Twenty Parts. Part XIV. Price 7*s*. 6*d*. net.

RIDER, WILLIAM, AND SON, LIMITED, London.

How to Rest and Be Rested. By Grace Dawson. Price 6*d*. net.

ROUTLEDGE, GEORGE, AND SONS, LIMITED, London. (**DUTTON, E. P., AND CO.**, New York.)

Infant Feeding by Artificial Means. A Scientific and Practical Treatise on the Dietetics of Infancy. By S. H. Sadler. Third edition. Price 3*s*. 6*d*.

SANITARY PUBLISHING CO., LIMITED, London.

Sanitary Law and Practice. By W. Robertson, M.D. Glasg., D.P.H., and Charles Porter, M.D., B.Sc., M.R.C.P. Edin. Price 10*s*. 6*d*. net.

SHAW AND SONS, London.

Symptoms and Their Interpretation. By James Mackenzie, M.D., M.R.C.P. Price not stated.

SPRINGER, JULIUS, Berlin.

Lehrbuch der Nervenkrankheiten. Herausgegeben von Dr. Hans Curschmann. Price M.24.

Die chemische Entwicklungserregung des tierischen Eies. (Künstliche Parthenogenese.) Von Jacques Loeb. Price, paper, M. 9; bound, M. 10.

STEINHEIL, G., Paris.

L'Hypophyse et la Médication Hypophysaire. Par M. le Docteur Arthur Delille. Price Fr. 6.

TREAT, E. B., AND CO., New York.

Transactions of the American Pediatric Society. Twentieth Session. Edited by Linnæus Edford La Fétra, M.D. Volume XX. Price not stated.

UNWIN, T. FISHER, London.

Abel. A Mystery. By Dr. David Sandler, Author of "The Bride of the Bosphorus." Price 2*s*. 6*d*. net.

VIGOT FRÈRES, Paris.

Conférences sur les Accidents du Travail et les Affections Traumatiques. Par le Dr. Olivier Lenoir. Préface du Professeur Paul Segond. Price Fr. 3.50.

VOSS, LEOPOLD, Hamburg.

Krolls Stereoskopische Bilder fur Schielende. 28 farbige Tafeln. Von Dr. R. Perlia. Siebente verbesserte Auflage. Price M. 3.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (**SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED**, London.)

Golden Rules of Dental Surgery. By Chas. W. Glassington, M.R.C.S., L.D.S. Ed. ("Golden Rules" Series, No. XIII. Third edition.) Price 1*s*.

Arthritis Deformans: comprising Rheumatoid Arthritis, Osteo-[illegible] mans. By R. Llewellyn Jones, [illegible] Edition. Revised and largely [illegible] cene, B.A., M.B., B.C. Cantab., F.R.C.S. Eng. Price 12*s*. 6*d*. net.

YEAR BOOK PRESS, THE, care of **SWANN SONNENSCHEIN AND CO., LIMITED**, London.

The Girls' School Year Book (Public Schools). April, 1909, to April, 1910. Price 2*s*. 6*d*. net.

YEAR BOOK PUBLISHERS, THE, Chicago. (**G. GILLIES AND CO.**, Glasgow.)

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume II. General Surgery. Edited by John B. Murphy, A.M., M.D., LL.D. Series 1909. Price 8*s*.

Appointments.

[illegible] *Public Institutions,* [illegible] *this column, are* [illegible] *ected to the Sub-* [illegible] *morning of each* [illegible]

BOLUS, HARRY, has been appointed Honorary Medical Officer to the [illegible]

Langran, William, L.R.C.P. & S. Edin., L.A.H. Dub., has been re-appointed Medical Officer of Health for the Axminster (Devon) Rural District Council.

McEwen, H. F., M.D. Halifax, has been appointed Clinical Assistant to the Chelsea Hospital for Women.

Macmillan, A. S., M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Market Bosworth District of the county of Leicester.

Martin, E. K., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

O'Hart, P., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Carney District of the county of Sligo.

Parry, John R., M.B. Tor., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

Smith, John William, M.B., C.M. Edin., F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 7 and 8, to be attached more particularly to Salford and Manchester County Courts.

Steen, Robert Hunter, M.D. Lond., has been appointed Professor of Psychological Medicine at King's College.

Suckling, J. J., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

Sutton, H. M., M.R.C.S., L.R.C.P. Lond., has been appointed [illegible]tory and Workshop Act for the [illegible]wall.

Tas[illegible]., has been appointed Obstetric [illegible]pital.

Th[illegible] has been appointed Clinical [illegible] Women.

Thomas, W. M., *L.R.C.P. Lond., M.R.C.S. Eng., has been appointed* Certifying Surgeon under the Factory and Workshop Act for the Lostwithiel District of the county of Cornwall.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Aberdeen, University of.—Examiners in Anatomy and Physiology.

Bournemouth, Royal Boscombe and West Hants Hospital.—House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

Burnley, Victoria Hospital.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

Cairo, Egypt, School of Medicine.—Professor of Anatomy. Salary £800 per annum, with pension rights.

Cancer Hospital, Fulham-road, London, S.W.—Surgeon.

Canterbury, Kent and Canterbury Hospital.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

Cheltenham General Hospital.—House Physician, unmarried. Salary *£70 per annum, with board and lodging*

Chester, City and County.—Medical Officer of Health. Salary £500 per annum.

Chesterfield and North Derbyshire Hospital.—Junior House Surgeon. Salary £60 per annum, with board, apartments, and laundry.

Derby, Derbyshire Royal Infirmary.—Assistant House Surgeon. Salary at rate of £60 per annum, with board, residence, and washing.

Dumfries and Galloway Royal Infirmary.—Assistant House Surgeon. Salary £55 per annum, with board and lodging.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, laundry, &c.

Fife and Kinross School Boards.—Five School Medical Inspectors (one female). Salaries of males £250, and of female £200 per annum.

Gordon Hospital for Fistula, &c., Vauxhall Bridge-road, S.W.—Resident House Surgeon.

Hospital for Consumption and Diseases of the Chest, Brompton.—Resident House Physicians for six months. Salary £25.

Hospital for Sick Children, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence.

Inverness, Northern Infirmary.—House Surgeon. Salary £100 per annum, with board, &c.

Leeds, Hospital for Women and Children.—Honorary Surgeon (Gynæcological and Obstetrical). Also House Surgeon for six months. Salary at rate of £50 per annum, with board.

Leeds Public Dispensary.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer at Hampstead. Salary £50 per annum, with board and residence. Also Assistant Resident Medical Officer at Northwood. Salary £50 per annum, with board and residence.

National Hospital for the Relief and Cure of the Paralysed and Epileptic, Queen-square, Bloomsbury.—Surgeon for Diseases of the Ear and Throat.

Newport and Monmouthshire Hospital.—Third Resident Medical Officer. Salary £60 per annum, with board, residence, and laundry.

Poplar Hospital for Accidents, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

Portsmouth, Royal Portsmouth Hospital.—Assistant House Surgeon for six months. Salary £50 per annum, with board, &c.

Plymouth, South Devon and East Cornwall Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Queen's Hospital for Children, Hackney-road, E.—House Surgeon, also House Physician, both for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

Somerset Administrative County.—Medical Officer of Health. Salary £700 per annum.

Southampton, Royal South Hants and Southampton Hospital.—House Physician for six months. Salary at rate of £100 per annum, with rooms, board, and washing.

Sunderland, Monkwearmouth and Southwick Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Switzerland, Queen Alexandra Sanatorium, Davos Platz.—Resident Medical Superintendent, unmarried. Salary £200 per annum, with board and residence.

Tiverton, Devonshire, Infirmary and Dispensary.—House Surgeon and Dispenser. Salary £80 and all found.

Wallingford, Berks County Asylum.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.

West Bromwich District Hospital.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

West Hartlepool, Cameron Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and laundry.

West Riding Asylum, Wadsley, near Sheffield.—Fifth Assistant Medical Officer. Salary £140 per annum, with board, &c.

Westminster Hospital, opposite Westminster Abbey.—Assistant House Physician for two months. Board provided. Also Resident Obstetric Assistant for six months.

Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

Wimbledon, Borough of.—Medical Officer of Health and School *Medical Officer. Salary £500 per annum.*

Whitehaven and West Cumberland Infirmary.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

Winchester, Royal Hampshire County Hospital.—House Physician, unmarried. Salary £65 per annum, with board, residence, &c.

Wolverhampton and Midland Counties Eye Infirmary.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.

Worcester County and City Asylum, Powick.—Third Assistant Medical Officer. Salary £140 per annum, all found.

The Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Maidenhead, in the county of Berks; at Barmouth, in the county of Merioneth; at Hythe, in the county of Kent; at Haywards Heath, in the county of Sussex; at Castletown Berehaven District in the county of Cork; at Harris, in the county of Inverness; at Ollaberry, in the county of Shetland; and at Bellanagh, in the county of Cavan.

Births, Marriages, and Deaths.

BIRTHS.

Gavin.—On June 22nd, at the Medical Mission Home, Anand, Western India, the wife of Neil M. Gavin, F.R.C.S. Edin., of a son.

Price.—On June 25th, at The Croft, Orpington, Kent, the wife of C. E. Price, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

Cunningham—Clarence.—On June 17th, at All Saints, Chardstock, by the Rev. E. A. Midwinter, Vicar of St. Paul's, Marylebone, assisted by the Rev. A. W. Bull, Rector of the Parish, and the Rev. J. E. B. Brine, Vicar of Studley, Oxford, John Francis, eldest son of J. K. Cunningham, of Sec Tor, Axminster, to Phyllis Lovell, youngest daughter of L. B. Clarence, of Coaxden, Axminster, late Judge of the Supreme Court, Ceylon.

Girdlestone—Chatterton.—On June 26th, at the parish church of Wimbledon, Gathorne Robert Girdlestone, M.A., B.M. Oxon., M.R.C.S., to Ina Mabel, second daughter of George Chatterton, J.P.

Guthrie—Cox.—At St. Peter's Church, Rock Ferry, on June 26th, 1909, by the Rev. W. L. Paige-Cox, M.A., Alverly Edge, uncle of the bride, assisted by the Rev. T. J. Evans, M.A., Rock Ferry, Vicar of the Parish, Thomas Mansfield Guthrie, M.B., Rock Ferry, eldest son of the Honourable Lord Guthrie, one of the Senators of the College of Justice, to Evelyn May Spear Cox, eldest daughter of the late Arthur S. Cox, Rock Ferry, and of Mrs Cox, 74, Rock-lane West, Rock Ferry, and granddaughter of the late William Paton, Esq., Rock Ferry. At Home, 233, Bedford, Rock Ferry, 6th to 11th September inclusive.

Hosegood—Lewis.—On June 22nd, at St. John's Church, Blackheath, Samuel Price Hosegood, M.R.C.S. Eng., L.R.C.P. Lond., to Dorothy Margaret, widow of the late Robert Lewis.

Sington—Cohen.—On June 30th, at Liverpool, Harold S. Sington, M.D., M.R.C.S., L.R.C.P., of 23, Cleveland-gardens Hyde Park, to Ruth Louise, younger daughter of Mr. and Mrs. Louis S. Cohen, of The Priory, St. Michael's Hamlet, Liverpool.

DEATHS.

Wilmot.—After a short illness, in his 67th year, Alfred Edward Wilmot, M.R.C.S., L.R.C.P., J.P., of Burnham [illegible]

Woolrabe.—At Melbourne, on May 8t[illegible] (Peggy), beloved wife of Frederick W[illegible] Edin., D.P.H., of Riccarton, near Cam[illegible] Officer to the Government of Queensland, Brisbane.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"PHARMACY" EXTRAORDINARY.

WE do not remember to have noticed previously quite so impertinent an announcement as appeared in the *Daily Graphic* of June 28th, for it purported to emanate, not from one of the pirates of medicine, but from a man who owed the greater part of his living to its qualified practitioners whose skill he proposed to exploit. The advertisement ran in these words:—

> PRESCRIPTIONS (guaranteed copies) by eminent London and Continental Specialists; any disease; post free 2*s.* 6*d.* from retired West End pharmacist, Robertson, 6, Elmbourne Road, London, S.W.

The question of the ownership of prescriptions is a vexed one, but at any rate copyright in them cannot be vested in the man who makes them up. The position of the huckster is also curious. If he seeks to add to the attractions of his wares by disclosing to his customers the identity of the "London and Continental Specialists," from whom he had them in trust, it should not be hard for one of those gentlemen to obtain an injunction to prevent him from continuing his curious trade. If he does not give the names of the authors of the prescriptions how is the public to know the truth of his claims? Be all this as it may, the gross breach of professional decency which the advertisement implies is apparent, and deserves the notice of the Pharmaceutical Society of Great Britain, even though the "West-End pharmacist," having retired, has no further respect for its authority. But perhaps the chief feature of the advertisement is its fatuity, for although the advertiser offers prescriptions for "any disease" he does not suggest the method by which the disease may be recognised by its victim, neither does he show any authority to claim the skill which can match a disease with its appropriate prescription. In making these remarks we do not, of course, forget that the advertisement carries no proof of its *bona fides*, and for the credit of the profession of pharmacy we would prefer to regard it as the device of an ordinary adventurer to make money without doing any work for it.

ACIDOSIS AND DIABETES: A SUGGESTION.

To the Editor of THE LANCET.

SIR,—When the state of acidosis develops in diabetes mellitus alkalies are given in the form of a sodium salt alone or of a potassium salt alone, but never, as far as I can learn, are the alkalies combined.

The alkalies have two uses: they serve to neutralise obnoxious acids, and they replace what is abstracted from the tissues and the body fluids. The sodium salt will refurnish the fluids mainly, and the potassium salt the tissue cells. The sodium salt will not give much help to the nervous system, nor the potassium salt to the fluids, where, in the case of the blood, the sodium plays the essential part in respiration. Thus coma, which I presume to have a double origin—the state of the nerves and the failure of gaseous exchange—cannot be so efficiently retarded with one base as with two. But in diabetes there is deprivation of all four of the principal bases, and though the calcium and magnesium come mainly from the bones their loss elsewhere must result in derangement. Is there not, then, some reason for trying an experiment in which all four bases are used?

I am, Sir, yours faithfully,

Newcastle-on-Tyne, June 19th, 1909. W. T. GIBSON, A.R.C.S.

⁂ Our correspondent's suggestion is interesting, but in view of the marked depressant properties of potassium ions when injected intravenously great care would be necessary in regard to this base.—ED. L

MEAT WARRANTY AND INSURANCE AGAINST TUBERCULOSIS.

MUCH has been heard of late on the subject of the meat warranty. In many quarters the farmers and butchers have adopted a system of mutual insurance, and the arrangement seems to be working satisfactorily. Lewes, the county town of Sussex, provides an example of this. At the market here something like 5000 bullocks and cows and over 3000 calves were sold during the year just ended, and the figures submitted to the annual meeting in connexion with the scheme of insurance against tuberculosis show that during the 12 months the sum of £258 1*s.* 6*d.* was collected from the sellers, while £111 0*s.* 6*d.* was paid out, including expenses, leaving a balance of £146 in hand. The payments were made for the following items:—

	£	*s.*	*d.*
3 cows and 3 parts of cows	46	10	5
13 pigs condemned...	22	13	1
1 steer and part of a runt steer	21	3	6
Part of 1 heifer...	10	13	0
1 calf	2	16	3
13 pigs' heads	1	13	6

Practically the whole of the money received from the insurance of cows was paid away and the balance in hand was almost entirely made up by the contributions received in respect of steers, heifers, and calves. Notwithstanding the thousands of animals passing through the market there was a very small percentage affected with tuberculosis. Pending legislation on meat warranty, the mutual insurance scheme appears excellent in more ways than one, and its adoption should certainly help to safeguard the public against tuberculosis. The Government has recognised the principle of compensation, but has not yet gone so far as to provide the money out of the Exchequer, and whatever be the future law on the subject it appears probable that a system of insurance will be adopted by the class that may be rendered liable to financial loss under its provisions.

THE HEALTH OF GERMAN EAST AFRICA.

EIGHT years have elapsed since the last British consular report on German East Africa was published, so that more than usual interest attaches to the new one recently laid before Parliament. It is written by Mr. Vice-Consul Douglas Young, who mentions incidentally that the white population on Jan. 1st, 1908, was estimated at 2845, as compared with 2629 on the same date in the preceding year; this represents an average of one to 135 square miles. In a newly colonised country possessing an area of 384,169 square miles, a census taking of the native population is obviously an impossibility, but it is roughly calculated at between 8,000,000 and 10,000,000. Both the mortality and the birth-rate are believed to be greater on the coast than in the interior. On the coast this population is chiefly composed of Swahilis, a hybrid race of Arab and native strain, while the interior is peopled by various tribes of the Bantu race. The climate on the coast and in the lowlands is hot and enervating and in some places dangerous to Europeans, but the town of Dar-es Salaam may be considered as comparatively healthy, thanks to its favourable situation in regard to the monsoons and to the good work done by sanitary authorities. The highlands of the interior are for the most part healthy and suitable for European settlement. The highest reputation in this respect is enjoyed by the Usambara highlands behind Tanga and by the Moschi district at the foot of Mount Kilimanjaro, which have consequently become the chosen localities of European planters The chief diseases which claim victims among the white population are malaria, blackwater fever, and dysentery. The most prevalent diseases among the natives are small-pox, chicken-pox, malaria, and ankylostomiasis which constitutes a serious danger to the colony. It first broke out in 1906 in the coastal districts, especially Tanga and Rufiji, and spread rapidly, claiming many victims. The number of cases treated quarterly in the native hospital at Dar-es-Salaam alone has risen from an average of 20 to over 90 in recent years The disease, which appears to be a particularly insidious one, is being energetically met by the thymol treatment, but the work of the medical authorities is rendered the more difficult by the ignorance and indifference of the natives in regard to sanitary precautions. German East Africa has remained remarkably free from outbreaks of plague, and the success with which the introduction of the disease by sea from India and South Africa has been prevented is undoubtedly due to the stringent quarantine measures which are adopted against the shipping of infected ports. Sleeping sickness constitutes a grave danger to the colony, and is regarded by the Government as so serious a menace that no effort or expense is being spared to combat the disease. Following upon the researches made by Professor Koch in Uganda, expeditions have been organised to Ujiji and Shirati, the centres of the infected districts, and a regular plan of campaign has been adopted against the scourge in the organisation of segregation camps, the clearing of vegetation from the shores of the lakes, and the destruction of crocodiles and other reptiles on which the infection-bearing fly (Glossina palpalis) thrives. Little doubt is felt that sleeping sickness was originally introduced into German East Africa from British and Congolese territory, first of all to the shores of Victoria Nyanza, notably at Shirati and Muanza, whence it gradually spread eastward and southward to Lake Tanganyika, where the presence of the dreaded Glossina palpalis has been detected as far south as the mouth of the river Mlagarassi. In consequence of this it is proposed to open three new stations on Lake Tanganyika. Much good is expected to result from the Anglo-German agreement signed on Oct. 27th, 1908, for the combating of the disease. Both Dar-es-Salaam and Tanga now possess commodious and well-equipped hospitals for Europeans, situated in the best positions available as regards the monsoons They are staffed by Government medical officers and nursing sisters, the Sewa Haji Hospital in the former town having been founded by the munificence of an Indian in 1893 In other places on the coast and at interior stations the medical needs of Europeans and natives alike are cared for at the various mission stations. The Leinhardt sanatorium, ideally situated at Wugire in West Usambara, nearly 4000 feet above sea level, provides a place of rest and recuperation for invalid and convalescent Europeans at a reasonable charge. The town of Dar-es-Salaam is fully described in the report, which speaks most favourably of its situation and sanitary supervision.

CHLORODYNE.

OUR attention has been drawn to a statement that Collis Browne's chlorodyne contained appreciable traces of prussic acid The proprietors deny that such is the case, and a recent chemical analysis made by ourselves of a sample purchased in the open market justifies this denial. We could find no trace either of hydrocyanic acid or of any cyanide, the separation and identification of which is a simple

matter, extreme delicacy of detection being also possible. It may be pointed out that the tinctura chloroformi et morphinæ composita of the Pharmacopœia contains hydrocyanic acid, as does also the not official liquor chloroformi compositus, but in the chlorodynum of the British Pharmacopœia codex hydrocyanic acid is omitted. According to analyses published in pharmaceutical works some years ago chlorodyne contained hydrocyanic acid, but Martindale (Extra Pharmacopœia, 13th edition, 1908) says: "We doubt whether hydrocyanic acid is now an ingredient," and according to our recent analysis the ingredient no longer appears. Chlorodyne comes, therefore, under Part 2 of the Schedule of the Pharmacy Act, 1868, and not under Part 1, which includes hydrocyanic acid.

GIVING A TRADE A BAD NAME.

His honour Judge Smyly, when hearing judgment summonses at the Shoreditch county court recently, seems to have been a little alarmed as well as puzzled by the wife of a debtor, who was understood to say that her husband carried on the trade of "a skull maker." On the learned county court judge inquiring further as to what he termed the "gruesome business," and particularly whether it kept the manufacturer busy, a point material in ascertaining his means to pay, he was reassured by the explanation that the manufacture was of "sculls for boats," at which he expressed relief.

BEE DISEASE.

THE Board of Agriculture and Fisheries desire to warn all bee-keepers that an outbreak of disease believed to be identical with the Isle of Wight bee disease has occurred in several hives in Buckinghamshire. This disease, which has destroyed almost all the bees in the island from which it takes its name, is due to a bacillus closely resembling the bacillus of plague and no remedy for it is known. It is of the utmost importance, therefore, that bee-keepers should take every precaution to prevent the disease spreading, and they are strongly advised to keep a careful watch for any signs of its appearance. A full description of the disease was published in the *Journal of the Board of Agriculture* for February, 1909, and bee-keepers who find symptoms of disease corresponding to the description there given should communicate with the Board of Agriculture and Fisheries, 4, Whitehall-place, London, S.W.

NON-ALCOHOLIC GALENICALS.

IN a leading article under the above heading in THE LANCET of June 19th, 1909, p. 1764, reference was made to the opportunity which the imposition of increased taxes on alcohol afforded of reducing to a minimum the use of alcoholic preparations of drugs without loss of therapeutic efficiency or of what is known as pharmaceutical elegance. Mr. W. Martindale of 10, New Cavendish-street, London, W., points out that a certain amount of discrimination should be used in employing glycerine as a substitute for alcohol, since all drugs are not suitable for glycerine extraction. When, for example, resinous drugs have to be extracted glycerine is not admissible, but if the active ingredients are soluble in water they are in most cases soluble in glycerine also. In regard to alkaloids, it was found desirable to employ glycerine acidulated with a small percentage of acetic acid. Under the title of "glycetracta" a number of quite elegant preparations are made on the lines indicated, and according to some specimens we have examined the results are distinctly satisfactory. Mr. Martindale points out that such preparations must contain at least 25 per cent. of glycerine to preserve them. The preparations are described in the Extra Pharmacopœia (thirteenth edition), and among those examined were belladonna, catechu, calumba, cinchona, colchicum, ergot, gentian, hyoscyamus, krameria, senna, taraxacum, all representing standardised preparations which are miscible with water (which is not the case with some of the alcohol preparations), palatable, and, of course, distinctly cheaper than the corresponding alcohol tinctures.

◆

W. E. H.—The best text-book on Hygiene in German of the description mentioned is "Prausnitz, Grundzüge der Hygiene," published by Messrs. Lehmann at Munich at the price of M.9.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 1st, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 25	29·65	W.	0·83	65	56	52	52	54	Raining
" 26	29 87	W.	0·33	106	63	50	49	51	Overcast
" 27	29 89	S.W.	1·00	84	58	51	51	52	Raining
" 28	29·93	S.W.	0·03	110	66	49	52	54	Cloudy
" 29	29·86	W.	...	99	63	54	54	57	Overcast
" 30	29·96	W.	0·19	92	62	53	53	55	Overcast
July 1	30·15	N.	...	91	59	48	49	52	Overcast

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

SATURDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Meeting at Cambridge).

(At 3 P.M.) Demonstration in the Pharmacological Laboratory by Professor W. E. Dixon and others.

(At 6.30 P.M.) Dinner in the Hall of Downing College.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8 P.M., Card Exhibit by Dr. F. W. Edridge-Green of Spectroscope for Testing Colour Perception. Mr. A. Lawson and Mr. M. Davidson: A Preliminary Note of the Treatment of Eye Disease by Radium. Presentation of the Nettleship Medal to Mr. Nettleship. The Annual Meeting of the Society will be held immediately after the Ordinary Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. C. F[illegible] [illegible]. 5.15 P.M., Lecture:—Dr. P. Stewart: [illegible]

TUESDAY.—4 P.M., Dr. H. Camp[illegible]. 5.15 P.M., Lecture:—Mr. C. H. Leaf: Surgical Treatment of Cancer of the Rectum.

WEDNESDAY.—4 P.M., Mr. T. Walker: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. F. Tredgold: Feeble-minded Children.

THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical). 5.15 P.M. [illegible]r: Acute Polyneuritis and Landry's [illegible]ases).

FRIDAY.—4 P.[illegible] Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 [illegible] Demonstration of Cases in [illegible]monstration:—Dr. Bernstein [illegible] Clinics. X Rays. Mr. Dunn [illegible] Operations. 5 P.M., Lecture:—[illegible]

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Edwards: Clinical.

FRIDAY.—10 A.M., Dr. Mo[illegible] [illegible]ations. Lecture:—Medical Registrar: [illegible] Wards. 2 P.M., Medical and Surgica[illegible] Davis: Diseases of the Throat, Nose [illegible] Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Armour Clinical.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. Mr. Harman: Diseases of the Eyes. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M., Lecture:—Mr. H. Evans: The Cesspools of the Body—Procedures of Surgical Drainage.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel).

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LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Prof. Hewlett: Artificial Immunization in Infection Diseases.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: [illegible] Out-patient [illegible] 11 A.M., Eye
THU[illegible] Rankin: Medi[illegible] P.M., Dr. Sale[illegible] [illegible]tions:—10 A.M., Surgical and [illegible] 2.30 P.M., Dr. G. Rankin: [illegible]
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WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.
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OPERATIONS.

[illegible] .M.), St. [illegible]), West- [illegible] College [illegible] Mark's [illegible]

[illegible] St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), West-[illegible]

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

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BEE DISEASE.

THE Board of Agriculture and Fisheries desire to warn all bee-keepers that an outbreak of disease believed to be identical with the Isle of Wight bee disease has occurred in several hives in Buckinghamshire. This disease, which has destroyed almost all the bees in the island from which it takes its name, is due to a bacillus closely resembling the bacillus of plague and no remedy for it is known. It is of the utmost importance, therefore, that bee-keepers should take every precaution to prevent the disease spreading, and they are strongly advised to keep a careful watch for any signs of its appearance. A full description of the disease was published in the *Journal of the Board of Agriculture* for February, 1909, and bee-keepers who find symptoms of disease corresponding to the description there given should communicate with the Board of Agriculture and Fisheries, 4, Whitehall-place, London, S.W.

NON-ALCOHOLIC GALENICALS.

IN a leading article under the above heading in THE LANCET of June 19th, 1909, p. 1764, reference was made to the opportunity which the imposition of increased taxes on alcohol afforded of reducing to a minimum the use of alcoholic preparations of drugs without loss of therapeutic efficiency or of what is known as pharmaceutical elegance. Mr. W. Martindale of 10, New Cavendish-street, London, W., points out that a certain amount of discrimination should be used in employing glycerine as a substitute for alcohol, since all drugs are not suitable for glycerine extraction. When, for example, resinous drugs have to be extracted glycerine is not admissible but

Medical Diary for the ensuing Week:

SOCIETIES.

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LYSED AND EPILEPTIC,

—Dr. J. Taylor: Treatment

—Dr. G. Holmes: Familial

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(9 30 A.M.), Samaritan Golden-
square (9 30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond street

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is necessary to set some boundaries, and I shall confine my inquiry to extraction with iridectomy ("combined" extraction), extraction without iridectomy ("simple" extraction), and extraction in the capsule. I may remark at the outset that the order in which I have enumerated the operations is, in my opinion, that of diminishing order of applicability to the ordinary cases of senile cataract.

One step is common to all the *methods—viz., the formation* of a section or incision. By well-nigh universal consent this is now made upwards, in or close to the apparent corneo-scleral margin. All are agreed that it should not exceed half the circumference of the cornea, that only in exceptional circumstances is so large a section necessary, but that too large a section is a trivial fault compared with one too small. A purely corneal section has been abandoned by most surgeons, and a peripheral scleral section is contraindicated owing to increased risks of prolapse of the iris; it is now customary to place the incision just sufficiently peripheral to ensure the formation of a conjunctival flap. This may be insignificant at the sides but increases gradually in width as the vertical meridian of the eye is reached. So uniform is the consensus of opinion upon the formation of the section and conjunctival flap that it would not repay us to spend time now on the consideration of details of relatively slight importance.

Iridectomy in some form or other is common to the combined operation and to extraction in the capsule as prominently advocated at the present day by Major Henry Smith, I.M.S., of Jullundur. The object of iridectomy is to allow a free passage of aqueous from the posterior chamber to the anterior chamber, thus reducing the manifold dangers of prolapse of the iris to a minimum. For this purpose it is essential that *the aperture in the iris should be large.*

It is especially requested
having a medical inter

duced by Bell Taylor, and has (printed on thin Schweigger, Pflüger, Kuhnt, Hess, and other prominent ophthalmologists. It will be seen that this device fulfils the main requirement of iridectomy with much less mutilation and with the retention of the circular pupil unimpaired. It is sometimes performed unintentionally in making the section if the aqueous escapes too rapidly. It has even been suggested that the iridectomy should always be effected deliberately in this manner! It is needless to point out that, apart from the pain experienced, leading to instability of the patient, there is no adequate control under these conditions over the amount of iris removed. If a button-hole be formed during the section the lens will very probably present in the aperture when its expression is being proceeded with. Difficulty will then be experienced in delivering the lens and probably it will be necessary to snip through the bridge of iris. If a small peripheral iridectomy is deliberately adopted it should be done after the lens has been extracted as in simple extraction. The periphery of the iris is then gently drawn out of the wound and the smallest possible fold is snipped off with de Wecker's scissors. The aperture in the iris is peripheral, so that it is almost entirely hidden by the sclerotic, and in any case is completely covered by the upper lid, while at the same time sufficient drainage from the posterior into the anterior chamber is provided for. There are other noteworthy advantages; *indeed, there are nearly* all the advantages of simple extraction without the drawbacks. Prolapse of *iris is less* likely to occur than in simple extraction, and it is quite unlikely that capsule will be left entangled in the wound, a decided drawback to extraction with the ordinary *form of* iridectomy. I can confirm the advantages of this method from personal experience, and I feel strongly that it is worthy of more extended use than it has hitherto had.

matter, extreme delicacy of detection being also possible. It may be pointed out that the tinctura chloroformi et morphinæ composita of the Pharmacopœia contains hydrocyanic acid, as does also the not official liquor chloroformi compositus, but in the chlorodynum of the British Pharmacopœia codex hydrocyanic acid is omitted. According to analyses published in pharmaceutical works some years ago chlorodyne contained hydrocyanic acid, but Martindale (Extra Pharmacopœia, 13th edition, 1908) says: "We doubt whether hydrocyanic acid is now an ingredient," and according to our recent analysis the ingredient no longer appears. Chlorodyne comes, therefore, under Part 2 of the Schedule of the Pharmacy Act, 1868, and not under Part 1, which includes hydrocyanic acid.

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[illegible]seases of the Throat, Nose, [illegible]es of Children. 12.15 P.M.,

Saarbach's News Exchange, Mainz. M. Takayasu, Osaka; T.—Dr. F. W. Thurnam, Nantymoel; [illegible]topliss and Whyman, Turner and [illegible] J. Thin, Forshaw, [illegible]cott, WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient … 11 A.M., Eye

THU… Rankin: Medi… P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., …

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NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, …

… Lecture:—Dr. J. Taylor: Treatment …

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OPERATIONS.

… 2 P.M.), St. George's (1 P.M.), (2.30 P.M.), Cancer (2 P.M.), Metro (9.30 A.M.), Samaritan (9.30 A.M. square (9.30 A.M.), Soho-square (London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), …

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(2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), …

is necessary to set some boundaries, and I shall confine my inquiry to extraction with iridectomy ("combined" extraction) … which had supervened … the first time 18 months ago (Christmas, 1907). He had a chancre when about 26, but has … his wife has had eight healthy … 15 he has had attacks of migrai… scotoma of the typical zigzag pattern (here is a sketch he has made of it), followed by headache lasting an hour or so. He has, however, had an otherwise healthy life as a clerk, and never had any convulsive attack till after he was 60. The epileptic fits are of some severity and appear to have all the characters of idiopathic epilepsy. First there is a visual aura, with flushing of the face, "the vision becomes dim, everything seems on the move," and zigzag lights appear; then he loses consciousness completely. He becomes rigid, and "struggling movements" of the limbs ensue. At times he has bitten his tongue, has had "foaming at the mouth," and micturated involuntarily. The fits last from half an hour to an hour and then he recovers. He has had one such fit every four or five weeks during the past 18 months—nearly always the first thing in the morning. The aura of these fits is interesting. In the main, you will observe that it is the same zigzag visual aura which has preceded the attacks of headache almost throughout life. Sometimes, as in idiopathic epilepsy, the aura occurs alone; sometimes during the past 18 months it was followed by convulsions. In the latter case the aura is associated with visible flushing of the face and a feeling of fulness in the head. He says: "When these fits come on I feel hot in the face and my head feels as though I had been stooping." This flushing of the face also occurs at other times. My colleague, Dr. James Mackenzie, to whom

under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1909, which was completed with the issue of June 26th, are given in this issue of THE LANCET.

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duced by Bell Taylor, and has … (printed on thin … Schweigger, Pflüger, Kuhnt, Hess, and other prominent ophthalmologists. … It will be seen that this … exion with this case is *idiopathic epilepsy*, and the characters of this patient's seizures conform to that malady. But the most important feature of idiopathic epilepsy is that it is due to something which is peculiar to the individual; something which is born with him or her and lasts throughout life. All authorities are agreed that true epilepsy starts for the first time in youth and the tendency lasts throughout life. Personally, I do not believe idiopathic epilepsy ever comes on for the first time in the latter half of life. In all my experience here and at the Paddington Infirmary and Workhouse, where I had 600 to 800 old people ill or well constantly under my care, I never saw a case of undoubted epilepsy (*grand mal* or *petit mal*) occurring for the first time in the latter half of life. Undoubtedly, when one or two true attacks have occurred in early life they may recur after a long interval. But there is no history of previous fits in this case at any time prior to the age of 60.

2. *Hysterical convulsions* may supervene almost at any age though they are commonest about the evolution and involution of the sexual functions. They are practically limited to the female sex; they are generally initiated by some emotional upset and start with some emotional outburst like crying and laughing; there is nearly always a history of previous nervous attacks or other evidence of the hysterical diathesis. But this case does not conform to hysterical attacks of any kind.

3. *Intracranial syphilis* is the most frequent cause among my out-patients of convulsive fits occurring for the first time in persons over 30 years of age. Sometimes these are due to a gummatous deposit in or upon the brain, sometimes to a more or less localised meningeal thickening, sometimes to a

without some associated cardiac failure on the one hand, or cardiac hypertrophy on the other.

13. *High blood pressure and cardio-arterial hypermyotrophy* may undoubtedly give rise to convulsive seizures and other head sensations occurring for the first time in advanced life. I am not aware whether any observations have been made on the blood pressure in epileptic and other convulsions—these would be very important and interesting—but I have seen many cases of very high blood pressure and cardio-arterial hypermyotrophy, without other defects, attended by convulsions. Both of these circulatory derangements undoubtedly exist in A. B., and I believe them to be the cause of his convulsive attacks. The history and physical signs of his case exclude all the other possibilities. Uræmia is the only other cause worth discussing and uræmic convulsions would hardly recur for 18 months, without some definite evidence of renal disease; there is no albumin or casts and the urine is only limpid, as in all cases of high blood pressure. I shall put him on treatment to lower the blood pressure and will report to you the result at our next meeting.

This case would probably still be regarded by some as one of "chronic Bright's disease," but I think this name should be reserved for cases in which there is definite evidence of renal disease as the primary and principal malady. Here all the symptoms are circulatory and the case may, in my view, be briefly expressed as one of cardio-arterial hypermyotrophy and high blood pressure consequent on a long series of constantly recurring high tension such as would be produced by his vaso-motor defect (scintillating scotoma and headaches) throughout life, coupled, perhaps, with toxæmia. It is not sufficiently recognised that renal disease is not the only cause of high blood pressure. One of the first [illegible] ches into arterial disease [illegible] 6–92 was the fact that ma[illegible] or other consequences of high blood pressure presented absolutely healthy kidneys. I wish to protest once more against including all cases which present high blood pressure, cardio-arterial hypermyotrophy, and urine of low specific gravity with an occasional trace of albumin, in the category of chronic Bright's disease. High blood pressure, as Sir Thomas Clifford Allbutt has often insisted, is a definite pathological condition with a sufficiently definite group of symptoms to receive a definite name—hyperpiesis is the name he suggested. Among the *causes* of hyperpiesis renal disease is certainly one, but there are also many toxins produced within the body, such as those of gastric and intestinal origin, or introduced from without, such as lead, which ca[illegible] disease. Urine of low [illegible] ith high blood pressure, [illegible] h blood pressure (no matter what is the cause in operation) When old people go out of doors in very cold weather their blood pressure goes up and their urinary specific gravity goes down. Pathological and long-continued high blood pressure (no matter what its cause) is often attended by a trace of albumin in the urine, and I even go so far as to believe, though I am not yet in a position to prove it, that some of the conditions we call contracted granular kidney are a consequence, rather than a cause, of long-continued or recurrent high blood pressure. Among the *consequences* of constantly recurrent high blood pressure is, as I have shown,[3] a slight but definite increase in the muscular tunic of all the arteries, and that this muscular tissue may become faintly granular and rigid, which leads not only to its non-adaptability to alterations in posture as I have just mentioned, but it also leads to cardiac hypertrophy. Then follows a struggle or opposition between the heart on the one hand and the arterial system on the other. That is what is now going on in our patient, in whom at present the heart is winning. In course of time one or other must accept defeat (degeneration and dilatation) unless in the meanwhile rupture takes place somewhere. If his vessels will dilate ever so little he will lose his symptoms and pass to a comfortable old age.

14. There is yet one more cause of convulsions supervening for the first time in advanced life—*Adams-Stokes disease* or *Heart block*. It is a morbid condition, first described by Adams in 1827 and more fully in 1836 by Stokes. It is characterised by a permanently slow pulse with syncopal and epileptiform attacks. It is due to a defective cardiac action. Dr. Mackenzie has shown, by tracings taken on the jugular vein, that although the auricle may be contracting, say, 80 to the minute, the ventricle may contract only 40 or less, missing one or more alternate beats. The condition is probably due to fibrosis or some other defect in the bundle of His, which normally transmits the cardiac stimulus from auricle to ventricle. The patient may come to you for dyspnœa or other cardiac symptoms or for epileptic attacks. A. B. has not got this condition. Less severe attacks, more of a syncopal type, may occur, as illustrated in the patient whom I now show you, aged 53, and who has only had one such attack. His pulse has always averaged 45, and his blood pressure at one time averaged 195. His case, I think, also illustrates the value of the high potential current in cases of high blood pressure.

TREATMENT.

By way of *summarising the pathology* of the various forms of syncopal, vertiginous, and epileptiform seizures which occur for the first time in advanced life my experience among the aged has led me to the following conclusions:—

1. That idiopathic epilepsy never arises for the first time in advanced life.

2 That at least nine-tenths of these syncopal, vertiginous, and epileptiform seizures are circulatory in origin.

3. That senile syncope is generally due to cardiac failure and low blood pressure.

4. That senile vertigo and similar head sensations (postural vertigo, interruptions of thought, &c.) are due to the disturbances of the regulator mechanism of the arteries in different parts of the body owing to arterial hypermyotrophy or other arterial disease, not necessarily accompanied, as far as my observations go, by any notable alteration of the general blood pressure or of cardiac increase or diminution.

5. That senile epilepsy (convulsive attacks) is generally due to increased blood pressure with cardio-arterial hypermyotrophy.

All these attacks of senile syncope, senile vertigo, and senile epilepsy merge into and are associated one with the other; vertigo may occur at one time, convulsions at another, and the same patient may in the end die from syncope (when the heart is defeated).

The *treatment* of epileptiform and other like seizures occurring for the first time in advanced life follows naturally from the preceding remarks. Having investigated the other possible causes, the main thing is to concentrate our attention on the circulation—examine the heart, the arteries, and above all (from the point of view of treatment) the blood pressure. Then we must be guided by what we find to administer treatment to raise or lower blood pressure and to tone or to steady the heart

This patient, A. B., presents three conditions: (1) Inherent instability in the vaso-motor centres throughout life; (2) cardio-arterial hypermyotrophy; and (3) extremely high blood pressure. There may be a toxæmia. For the first bromides are useful to steady the instability, but nothing will eradicate it; for the second nothing can be done to remove the structural changes; for the third we can do much by a spare, well-regulated diet and by such remedies as the iodides, nitrites, &c., and regular purgation. The treatment of high blood pressure often falls within the province of the neurologist, and we may bear in mind that most of its known causes come under four headings: (1) *Deficient elimination* or deficient oxygenation of nitrogenous food, alcohol even in moderate doses in some, sedentary habits, and constipation; (2) various *toxæmic conditions*, such as renal disease, gout, intestinal toxins, diabetes, plumbism, &c.; (3) any condition leading to a recurrent *spasmodic contraction* of the arterioles, such as migraine; (4) plethoric conditions generally—a very good reason for bleeding, which is undoubtedly one of the promptest, most efficient methods (and, strange to say, the good effects will last a very considerable time) of relieving high blood pressure. It is nature's method. I can remember several of my old patients who remained well as long as periodic epistaxis (every six months or so) occurred, but when this ceased they incurred apoplexy and died, or became imbecile paralytics. We should do well sometimes to imitate nature's methods of dealing with her own difficulties.

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[3] Loc. cit.

THE RÔLE OF THE PERINEAL BODY DURING LABOUR AND THE CONDUCTION OF DELIVERY IN RELATION THERETO.*

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THE perineal body is that collection of tissues, which is wedge-shaped on mesial sagittal section, situated between the divergent extra-pelvic part of the vagina and anal canal. It is limited below by the skin between the anterior margin of the anal orifice and the fourchette, and laterally it passes outwards towards the ischial rami and tuberosities, to lose itself in the fat of the ischio-rectal fossæ. Since it is situated below the musculature which, with the coccyx and the ano-coccygeal raphe, forms the pelvic floor, it is outside the influence of the intra-abdomino-pelvic pressure, and for this reason, and because of the paucity of its tissue contents as palpation in the living readily discloses, it is plain it can play no part in the support of the pelvic viscera, nor can it be maintained that its rupture facilitates prolapse.

It is composed of subcutaneous tissue in which are embedded superficial muscles which have evolved from the superficial layer originally surrounding the primitive cloaca and which, like that, are sphincteric in function. Thus, the most—indeed, the only—conspicuous elements found within it clinically are the anterior parts of the two sphincters of the anal canal, both of which, by passing a finger into the rectum and another into the vagina, can be easily felt and their limits defined. The scanty pre-rectal fibres of the pubo-rectalis muscle, those passing to the perineal body from each side and forming a link between its two arms of origin and upon which Piquand and Hue[1] lay so much stress, cannot even be perceived by palpation. Further evidence of its structural weakness is shown by those cases in which part of the child—e.g., its arm—is burst through its tissues to be born at the anus, or in which the child itself has traversed bodily through it. Its thinness, the occasional occurrence of its central rupture, and the partial or complete laceration of its tissues so frequently found in women in whom the pelvic viscera are efficiently retained within the pelvis, all point to its insignificance and demonstrate its incapacity to play a part in the support of the viscera; a conclusion amply confirmed by the many failures which result in the attempt to cure prolapse by its repair alone. In spite of such facts, this truth concerning the perineal body has not been sufficiently recognised. Emmet[2] in 1883 clearly showed his poor opinion of it; but in spite of the indisputable facts he brought forward, his audience ridiculed him.

During childbirth, however, the perineal body exercises a far-reaching influence on the mechanism of delivery, an influence which is neither necessary nor good. That the part it plays is not necessary is shown by the occurrence of quite normal labour in cases of its previous rupture; that it is not beneficial is the task I have taken upon myself to show.

It is universally known that the fœtal head, which passes through the pelvic cavity flexed and which impinges upon the pelvic floor in the same attitude, is extruded from the body by a movement of extension. This mechanism may be divided into two periods: (1) in which primary extension occurs, caused by the resistance of the pelvic floor; and (2) in which secondary or continued extension occurs, caused by the resistance of the perineal tissues. That is to say, the occiput rotates around the bony unyielding boundary in front, whilst the forehead and face sweep past the stretched superficies of the levator, the stretched posterior commissure of the pubo-rectalis muscle, and the stretched tissues between this and the vulvar outlet—i.e., the flattened-out anal canal and perineal body.

The fœtal head in its descent first meets the superficies of the levator (region of coccyx); indeed, it is directed downwards and backwards from above and necessarily must do so. Not only is this evident by the bulging of the tissues behind the anus, but also on palpation of this region the hard head can be felt. Descent occurs. The coccyx is caused to recede and the levator becomes deepened and transformed into a broad, gutter-like declivity, sloping downwards and forwards, in which are placed the empty and flattened-out rectum and the intra-pelvic part of the vagina with the fœtal head. This deepening and widening of the levator takes place by a lengthening of its muscle fibres—i.e., of the iliococcygei—which pass inwards and backwards from the lateral pelvic walls to the ano-coccygeal raphe. At the inferior extremity of this gutter-like formation into which the pelvic floor is converted, the displaced and stretched posterior commissure of the pubo-rectalis muscle is found.

This muscle—called the pubo-rectalis, because it passes backwards from the pubes and encircles the rectum, the arm of origin of one side becoming continuous with the arm of origin of the other behind the gut,[3] surrounds the aperture in the pelvic floor through which the urethra, vagina, and rectum pass to reach the surface of the body from the pelvic cavity. During childbirth the pelvic floor aperture is enormously distended, and the muscle which surrounds it in a sphincter-like way correspondingly stretched. It is only when this dilatation of the aperture and stretching of its muscular boundary has been begun by the advancing pole of the fœtal head that this meets with the tissues situated beyond the aperture—i.e., the tissues surrounding the extra-pelvic part of the vagina[4] and the vaginal and vulvar orifices, of which the perineal body forms the posterior and most yielding parts.

Great as is the displacement of all these tissues during childbirth (i.e., of the pelvic floor itself and of the superficial tissues situated beneath it), that of the pubo-rectalis muscle is not so marked as one would think, for the increase in length of the tissues between the tip of the coccyx and the fourchette, which occurs during parturition, is for the most part the result not merely of a displacement but also of a marked stretching of the superficial tissues—i.e., of the anal canal, perineal body, overlying skin, extra-pelvic part of vagina, and superficial muscles (ext. sphincter); but whilst probably the raphe of the pelvic floor itself (ano-coccygeal raphe) stretches to some slight extent the chief change in this is limited to its displacement. This is shown by the position of the anus and by the anatomical fact that the posterior commissure of the pubo-rectalis is above and behind it. At the acme of birth the inferior margin of this muscle posteriorly is on the average about five inches distant from the fourchette. One has but to recall the enormous stretching of all these parts, the dilatation of the anus measuring as much as an inch or an inch and a half, and the extraordinary increase in length of the antero-posterior base of the perineal body measuring three inches or more (i.e., from the anterior margin of the dilated anal orifice to the intact fourchette) to realise how much all these superficial tissues beyond the pelvic floor extend and how thin they become. If we allow the distance from the inferior margin of the pubo-rectalis muscle to the posterior margin of the anal orifice to measure another inch, and it can scarcely be less than this, the five inches are accounted for. A comparison of the increase in the length of the tissue between the tip of the coccyx and the posterior margin of the anus with that in those between the same limit of the anus and the fourchette demonstrates how much greater is the stretching in the latter than in the former, the increase of which is largely due to the alteration in direction which the anal canal undergoes.

This stretching of the superficial tissues occurs, not only antero-posteriorly, but also transversely, and is accompanied by considerable tension. This tension demonstrates that they are offering a considerable resistance to the onward progress of the fœtal head. The tension in the transverse direction signifies a closer pressure upwards and forwards of the fœtal head against the pubic arch; whilst the tension antero-posteriorly determines its more forward and even upward projection, or rather of its anterior segment, for the fœtal head has now become converted into a relatively long ovoid. *Owing to the stretching of the perineal tissues in* the antero-posterior direction, the plane of the vulvar aperture becomes extremely oblique and approaches the coronal plane. That is to say, it looks considerably forwards. But the plane of the *pelvic floor* aperture is not nearly so oblique; it is, in fact, not far removed from the horizontal plane (i.e., in the erect posture); it still looks much more downwards than forwards—the location of its posterior commissure above and behind the anal orifice demonstrates this. Thus whilst the posterior extremities of the planes of these two apertures are considerably distant from one another, their anterior extremities are in close approximation. Since these apertures, although superimposed, are not in planes parallel with each other, it follows that an ovoid body passing through them at the same time must, whilst it is passing through one with its long axis perpendicular to the plane of that aperture, pass obliquely through the other. As the head reaches the pelvic floor aperture, bounded laterally and posteriorly by the pubo-rectalis muscle, it *begins to dilate it by endeavouring to pass through it* with its long axis at right angles to the plane of the aperture, for the resistance of the aperture causes the smallest circumference to distend it. When, however, the anterior extremity of the *fœtal head* has extended beyond this aperture it impinges upon the perineal body, and in its endeavour to maintain its direction and to continue with its long axis in the same straight line it forces the tissues of the perineal body downwards, which [illegible] in front of it, and in virtue of [illegible] ed posteriorly to its head within the birth canal and presents with it, it is easy to understand how it can be forced through the apex of the perineal body into the rectum, for it is only separated from this passage by the posterior vaginal and anterior rectal walls and the intervening connective tissue. It does not burst asunder the fibres of the pelvic floor musculature, but it passes through the pelvic floor aperture in a quite regular manner, and only deviates from one passage (vagina) to the other (rectum), both of which leave the pelvis by passing through the same aperture in the pelvic floor. And if in an ordinary vertex presentation with the arms in their usual position, the head is forced straight onwards against the perineal *tissues, and these are not able to deflect it forwards,* because it may be they yield too easily, not only do they stretch but, provided the uterine contractions are sufficiently strong, they also rupture, the child passing through the *breach, leaving the fourchette and vaginal orifice* perhaps intact. In this case, too, the transit through the pelvic floor is regular, and it is an error to suppose that its musculature is injured because of this event.

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* A paper read before the Obstetrical and Gynæcological Section of the Royal Society of Medicine on Jan. 14th, 1909.

[1] Revue de Gynécologie et de Chirurgie Abdominale, January-February, 1903.

[2] Study of the Ætiology of Perineal Laceration, Transactions of the American Gynæcological Society, vol. viii., p. 195, 1883.

[3] The part of the muscle behind the gut is the "posterior commissure." This is not to be confused with the "posterior commissure" of the vaginal orifice, which is placed below the pelvic floor.

[4] The extra-pelvic part of the vagina is that part situated between the pelvic floor aperture and the vaginal orifice (situation of hymen). Normally, it measures about a half to three-quarters of an inch in length. During childbirth, its posterior wall, which is closely incorporated with the tissues of the perineal body, becomes markedly lengthened as well as stretched from side to side.

Usually, however, in spite of considerable stretching of the tissues of the perineal body, and because of their position, their tension, and the resistance they offer to its progress, the extension of the head which is begun by the pelvic floor itself is continued, as can be seen in primiparæ. That is to say, the advancing pole of the head is deflected. This is easily accomplished, for owing to the length of the fœtal head a comparatively slight force will cause the direction of its long axis to change. So that, if the head enters the vulvar aperture, now considerably removed from its former position, with its long axis at right angles, this [illegible] changed [illegible] e passing at right angles through the plane of the pelvic floor aperture, but that it shall have become oblique. That is to say, that the pubo-rectalis muscle, instead of embracing a circle of the fœtal head, finds itself applied to an ellipse, the circumference of which is considerably greater than that of a circle, and therefore the muscle is correspondingly increased in length and subjected to a correspondingly increased stretching. If, however, the vulvar aperture is destroyed by a laceration, the movement forwards of the anterior extremity of the fœtal head does not occur, an oblique diameter does not occupy the pelvic floor aperture, and this, therefore, escapes a greater distension.

That the intact and unimpaired perineal body is, in fact, instrumental, by causing this increased distension of the pelvic floor aperture during childbirth, in effecting those [illegible] prolapse has its possibilities [illegible] is shown by the fact that [illegible] that, whilst the perineum has not been torn, there is marked evidence of its having *been considerably stretched*, such as can only be accounted for by the part it plays in causing secondary extension of the head. These cases have been explained by supposing that a subcutaneous or sub-mucous laceration has occurred: an untenable hypothesis in view of the fact that when these tissues as well as the skin and mucous membrane have been lacerated a prolapse by no means necessarily results, for it is quite common to see a lacerated perineum, so far from being subsequently complicated by a prolapse, to be quite free from visceral extrusion. Nor can these cases be explained by supposing some change or increased intensity of action of the intra-abdomino-pelvic pressure, the determinant of prolapse, has occurred. There is no doubt that the perineal body does play a part in childbirth to the detriment of the pubo-rectalis muscle; and that a laceration of its tissues by permitting birth with the least possible *distension of the* pelvic floor aperture may undoubtedly in some or in many cases prevent that injurious elongation or possible rupture of the muscle fibres (pubo-rectalis), which, limiting the aperture *laterally and posteriorly, cannot when injured so efficiently* guard it, and thus disposes to this dystrophy.

It is not to be thought that the perineal body exerts always a baneful influence, because all it can do is to determine an increased *distension of the pelvic floor aperture; that is not* necessarily an increased injury to the pubo-rectalis muscle, although this implies a greater elongation of its fibres; and as a factor in causing impairment of the muscle it is to be regarded in the same light as the size of the fœtal head. When this is small and remains more or less spherical during birth its continued extension will not cause an increased stretching of the muscle; when, however, the head is large and is moulded to the ovoid shape by its transit through the bony pelvis the slightest degree of this secondary extension will determine an increased stretching which may "precipitate" a laceration of the muscle fibres, or if this has already occurred may cause a greater injury.

Nor does the fact that in some cases a prolapse is found subsequently to co-exist with a perineal laceration negative the view here put forward. Rupture of the muscle fibres does not alone depend upon the elongation to which they are exposed; they are living tissues, and it is the manner in which they react to this lengthening which determines their *laceration. This again depends upon the time in which they* are allowed to stretch and is more likely to occur when the stretching is sudden (precipitate labour) than when it is gradual. It also depends on their condition of tone and their *resistance to this stretching, conditions* determined by the general health and the straining. Other conditions being equal, it is certain the greater the stretching the more probable the injury, and, the fœtal head being normal (i.e., ovoid in shape) and its size remaining *constant*, it is also certain that the stretching of the pubo-rectalis muscle will be the greater when secondary extension of the head occurs during birth, least when this extension is prevented as much as possible.

But such cases may be explained in another way. It is well known that tears of the perineal body often begin in the recto-vaginal septum; and it is easy to understand how deflection of the anterior pole of the head forwards towards the symphysis will determine an increased stretching of the vaginal tissues, just as it does to the pubo-rectalis muscle situated at the same level, and that if an injury is to occur as a result of this stretching it will do so posteriorly, where the movement of the fœtal parts is greatest. This extension of the head, then, may not only cause an injury to the pubo-rectalis muscle, but simultaneously a laceration of the perineal tissues. But when the perineal tear begins at the fourchette and passes backwards and upwards, it is caused in a different manner (by direct pressure of the advancing fœtal pole, not of a posterior part of the head, and instrumental delivery), and with a different result, for this allows secondary extension to diminish, or prevents its occurrence.

If during delivery these perineal injuries are prevented, or endeavour is made to prevent them, either by opposing the advance of the fœtal head, and thus allowing time for sufficient stretching, or by actually supporting the perineum, no good is achieved other than a preservation of these tissues; but much harm may accrue to the pubo-rectalis muscle from such manœuvres. And it would seem that an early perineal tear, and one beginning at the fourchette, in the place of being a disaster is often a blessing in disguise. Yet much is done nowadays to prevent perineal tears, and one institution vies with another in the hope of obtaining the smallest percentage of these trifling injuries. Further, so much insistence is laid on the immediate and accurate suture when laceration does occur that it is impossible but to think the advocates of these measures consider the perineal body subserves important functions in connexion with the visceral support. Perineal tears should be regarded in the light of superficial wounds elsewhere and treated in the same way. When the external sphincter of the anal canal is ruptured this indeed calls for repair; but when the laceration is "incomplete" there are only two reasons why it should be sutured: (1) to check hæmorrhage, and (2) to prevent infection of the wound and subsequently of the vagina. The question of "cosmetic effect" can scarcely influence us. To lay the emphasis that is laid on the repair of these tissues from the point of view of subsequent visceral support is surely to mislead, for we know that prolapse frequently does not occur even when the rupture is complete. Thus Matthews Duncan stated that a knife could be passed into the anus and brought out at the vulva and all the tissues divided between with no resulting prolapse. He based his statement on the experiment Nature so frequently performs for us, and pointed to the not uncommon cases of complete tear of the perineum without prolapse. He indeed thought that the cause of this non-descent was because the viscera were maintained in position by a suction upwards (i.e., atmospheric pressure), but we know now that the reason of this postural maintenance is caused by the continued activity of the pelvic floor musculature, which passing *behind* the anal canal remains intact in spite of such an incision.

If, then, the facts we have recited are true, and clinically we know them to be true, the question arises, What is the best method to adopt during delivery? It is obvious that attempts should be made to prevent secondary extension of the head. This is best done by the method described by Toff,[5] who advocated it as a means of perineal protection. When the anterior extremity of the head has appeared at the vulva and begins to distend it, two or more fingers should be placed between it and the symphysis pubis and traction exerted backwards. This should be especially done during the pains. It will be found that the natural tendency on the part of the head to extend can be easily overcome. Simultaneously, pressure may be applied above and behind the anus and is exerted upon the upper pole of the fœtal head, not only tending to maintain the attitude of diminished extension but also actively assisting the expulsion of the head. It may be thought that such a manœuvre will inevitably result in a tear of the perineal skin and other tissues. Strange to say, it does not do so; indeed, it frequently prevents such an accident, for it allows birth to occur with the least possible distension of the vulvar outlet.

I have practised this method of delivery on several occasions, and it has come to form part of my routine in these cases. It is simply wonderful how rapidly delivery can often be effected in this way and what real help it is to the patient.

Gordon-square, W.C.

A CASE OF ENDOTHELIOMA MYXOMATODES OF THE MAXILLARY ANTRUM.

By HERBERT TILLEY, B.S. Lond., F.R.C.S. Eng.,
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(*With a Pathological Note by* S. G. Shattock, F.R.C.S. Eng., *Pathological Curator, Royal College of Surgeons of England.*)

The clinical features of the case which forms the subject of this communication were so interesting and the pathological findings so extremely rare that they deserve being placed on record. With reference to the last point I am sure that no similar case has been recorded in any English journal, neither can I find any references to the disease in those standard French and German text-books devoted to diseases of the nose and its accessory cavities. On the other hand, I am quite convinced that in the month of October, 1907, I operated upon a precisely similar condition in so far as the patient's symptoms and the appearances and physical characteristics of the growth could be relied upon to establish the identity of the two cases. A histological examination of the tissue was made in this earlier case, but the report was so fragmentary that it would scarcely justify me at this juncture in recording more than the one and later example of endothelioma myxomatodes of the antrum.

History of case.—The patient, a married woman, was sent to me by her medical attendant on April 16th, 1909, complaining of "stuffiness of the left side of the nose with a slight mucopurulent discharge from the corresponding nostril and heavy colds in the head." These symptoms had been especially noticeable for the past four months. In a letter describing her symptoms in more detail the patient says: "For several years I have had bad headaches sometimes and always when tired, becoming more severe towards evening and lately most severe at night when they would awake me. I generally found a mustard plaster at the back of my neck and behind my left ear would give relief. My so-called headache affected the whole left side of my face, I had toothache, earache, and *severe* pain in my left eye. During a severe attack I could give my mind to nothing and sometimes felt something peculiar about the sight of my left eye, a sort of mistiness, and on about two occasions I seemed to see only about half an object; for example, in looking at the time I would only see three-quarters of the face of the clock."

On examination the left antrum was dark on transillumination, but neither in the canine fossa, over the left side of the hard palate, nor within the nasal cavity were there any very definite signs of distension of the antral cavity. Only in the left middle meatus and corresponding to the upper membranous portion of the inner antral wall I noticed a distinct fulness which offered slight resistance to the probe and gave much the same impression as would be derived from probing soft beeswax. I pierced this region and inserted a small spoon such as is used in aural work and withdrew upon it a very thick reddish-brown gummy substance such as I had only once before seen in this region, and this was in the earlier case already referred to. There were no polypi in the left nasal fossa, and beyond slight con gestion in the middle meatal region and the fulness of it outer wall (*vide supra*) these regions presented no abnor mality. The inner antral wall was now punctured by passing a Lichtwitz's trocar and cannula upwards, outwards, and backwards on the outer aspect of the inferior turbinal bone On injecting warm boracic lotion a sense of resistance wa felt, no fluid returned through the nostril, the patient experi enced a sense of fulness in the cheek bone and the secon upper left bicuspid, which was filled with an amalgam stopping, commenced to ache. Concluding that som unusual condition was present in the antrum I advised thorough examination under general anæsthesia, and obtaine the patient's consent to do what seemed best in any circum stances which might arise.

Under chloroform anæsthesia the left posterior naris wa plugged with a small captive sponge, the anterior two-third of the inferior turbinal removed, and the canine fossa full exposed through an incision in the gingivo-labial fol extending from the malar ridge to the canine root. Th antrum was now opened through the canine fossa, a hole o the size of a sixpence being made. The sinus was seen to b fully occupied by a growth the surface of which was of bluish-grey colour. There was no hæmorrhage from its surface nor was there any purulent or muco-purulent dis charge in the antrum. On removing some of the growth with a ring curette it was found to consist of a semi-solid, reddish-brown, gummy substance—in fact, I can think of no better simile than that the antrum appeared to be filled with a huge raisin in which the "stones" were missing. It was quite easy to remove this substance, which could almost be shelled out, and the lining of antrum appeared to be little altered from its natural condition. A little general oozing of blood occurred and it was impossible to find any region from which the growth seemed to take its origin. The inner antral wall and the anterior ethmoidal cells were next removed through the opening in the canine fossa, the parts cleansed, and the bucco-antral wound sutured.

The patient left the nursing home at the end of a week, and has recently written to me saying: "The operation has greatly relieved the symptoms, I have no stuffiness now, and have only had one headache at all the same nature since then; it was not severe, but my left ear ached a little, and I had [illegible] time."

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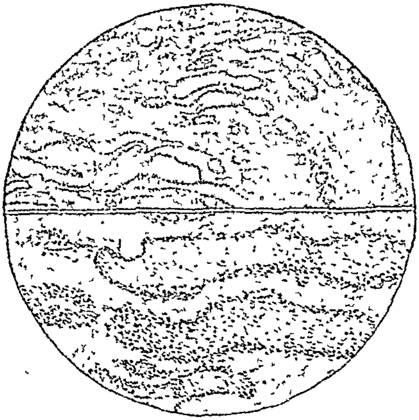
[5] Einige Worte über den Dammschutz, Münchener Medicinische Wochenschrift, vol. lv., p. 524, March, 1907.

[illegible] physical characteristics of the [illegible] were so unusual that I forwarded it to Mr. S. G. Shattock who subjected it to an exhaustive examination and has furnished me with the appended detailed report. Under his direction Mr. Ford (38, Berners-street, W.) has made the accompanying drawing which illustrates a typical portion of the growth under high and low powers of the microscope.



[illegible]). [illegible] nd [illegible] he [illegible] as [illegible] he

It would be interesting to know if such a condition has been met with by other surgeons, for I am convinced that my earlier case (October, 1907) was of the same nature. The patient's symptoms were almost identical except that her headaches were so constant and severe that her general health had been severely undermined and she looked so worn out and cachectic that one would not have been surprised to have discovered some advanced malignant disease or grave constitutional disorder.

The naked-eye appearances and the very sticky nature of the growth were identical in the two cases. In the first I obtained the following report from the pathologist: "The matrix of this tissue is composed of fibrous tissue which has undergone hyaline and granular degeneration. In the interstices of this necrobiotic tissue are seen scraps of infiltrated mucous membrane and bits of comparatively healthy fibrous tissue in which the nuclei of the individual fibres can still be seen."

The first patient has remained free from recurrence for two years and is now in perfect health, a consummation devoutly to be wished for in my second and more recent case.

PATHOLOGICAL REPORT BY MR. S. G. SHATTOCK.

The material consisted (in addition to two pieces of mucous membrane) of three somewhat voluminous masses, the largest about 2·5 centimetres in chief diameter and 1 centimetre in thickness, of soft mucinoid material, which rapidly swelled when immersed in water. It could be divided by the lightest pressure; the semi-transparent surface of the section so made was speckled with a more opaque, whitish substance, but presented no fibrous or other recognisable structure. The addition of acetic acid to a smear on a slide rendered it opaque from coagulation, the coagulum not dissolving in excess of the acid. The material readily hardened in formol and allowed of perfectly satisfactory study by means of frozen sections.

The sections were cut vertically to the free surface, and were stained, some with Ehrlich's hæmatoxylin; others with this followed by eosin; with carbol-thionine; and with Scharlach. The sections display groups of cells parted by an abundant mucinoid stroma, and often taking the form of long, slightly tortuous columns. The cells composing the groups are closely packed, and their nuclei of very diverse forms, distorted and flattened as though pressed out of shape by the swelling of the intervening stroma. There are no polymorphonuclear leucocytes or lymphocytes amongst or around them. The cytoplasm is distinctly visible in isolated cells, and in the carbol-thionine preparations stains slightly differently from the stroma. The cells are quite distinct from the other substance and take no part in its formation.

The general irregularity of form and the grouping of the cells, *together with the manner in which the groups become* attenuated and lost in the stroma (single, isolated cells of the same kind occurring in sparse numbers in the latter), recall the histological picture of certain types of endothelioma. There is nowhere any lumen to the groups. None of the "cancer bodies" present in carcinomata were found in any of the cells. The sections stained with Scharlach show that not a few of the cells contain moderate numbers of minute droplets of fat.

The stroma is everywhere in excessive bulk, and is either homogeneous or presents marks of fibrillation, with very few or no pertaining corpuscles. The substance in question has, it is clear, arisen from mucinoid degeneration, swelling and coalescence of the connective tissue fibres of a stroma between the cell groups; even where the fibrillation is most pronounced the individual fibres want the normal aspect and take an abnormal stain. In the preparations treated with hæmatoxylin the material is of different shades of violet, and so differs from normal fibre, which remains uncoloured. In the carbol-thionine preparations the material stains of a pale violet and pink, the two merging one into another; here and there it is traversed by a certain number of long twisted ribbon-like processes of a bright red colour, which from the way in which they follow all the windings of the circumjacent substance are evidently of the same kind, although the difference in colouration marks some slight difference in chemical composition.

A noteworthy feature in the degenerate stroma is the presence of long coarse crystals, tapering at the ends, and occurring singly or in bundles. In the carbol-thionine preparations these are stained of a pale sky blue; in the hæmatoxylin and eosin preparations they are of a pale orange; in the hæmatoxylin alone, they are uncoloured. That they are not due to the action of the reagents used is evident from the fact that in the material examined in the recent state the same crystals were present. In the microscopic sections, the crystals when cut transversely are regularly hexagonal, and this is equally true of those that are isolated and not subject to the lateral pressure due to their grouping. As to their nature, I have been unable to obtain information. They appear to be in some way connected with the degenerative process, and are described here rather for any future interest they may have than for any present.

The growth itself may be classified as an endothelioma of which the stroma has undergone mucinoid degeneration. An analogous condition is met with, though it is rare, in carcinomata. One such example only has come under my own observation. This was a carcinoma of the breast; the groups of epithelial cells retained their usual disposition, but the stroma was represented by a mucinoid material, staining violet in hæmatoxylin preparations, and arising from degeneration of the fibres of the stroma; the cells between the altered fibre persisted, some of them being branched, and so rendering the tissue mucous in character, although the mucinoid intercellular material arose from the degeneration and disappearance of the fibre. No crystals were present in the stroma. Such a change may be viewed indifferently as a mucinoid degeneration of connective tissue or as a metaplasia of common connective tissue into that known as mucous.

The term "Carcinoma myxomatodes" has already been applied to carcinomata of which the stroma consists of mucous tissue, and the same adjective may be used to cover the condition present in the tumour under consideration. The *growth would be an Endothelioma myxomatodes.* In the common endothelioma of the parotid gland the endothelial groups of cells lie partly in an open tissue of branching cells, but elsewhere in a hyaline matrix furnished with similar branching cells, the two stromata being transformed one into another. But the gross physical characters of such tumours are not myxomatous or myxoma-like; they are not comparable to the endothelioma described in the present report, and they would not merit the same name.

THE FATE OF DAMAGED JOINTS:

A STUDY OF CASES OF INJURY, PRINCIPALLY FRACTURES, *INVOLVING JOINTS TREATED IN THE MASSAGE* DEPARTMENT OF THE LONDON HOSPITAL.

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Although belonging to the commonplace, injuries in the neighbourhood of, and directly or in course of treatment involving, joints provide a theme of no small interest both to the practitioner and to the patient. To the former they furnish a field for diagnosis, prognosis, and diversity of treatment; while to the latter the ultimate result is the all-important consideration. It is with the last point of view chiefly in mind that the material for the following paper has been collected, but in judging of result it has been attempted to ascertain what has been the influence of treatment for good or evil. Moreover, in these latter days, with the overcrowding which is becoming more acute, with the liability of employers for the compensation claims of their injured workmen, with the increasing struggle for existence of individuals, and with the constant, though often unseen, wrestling for supremacy with other nations, a knowledge of the ultimate fate of accident cases, of what use they are as citizens and breadwinners, and the reasons why they recover with greater or less rapidity is of more than common interest. It is of small value to know that a patient left hospital with "first intention scar," or "firm union, no shortening." Inquiry must be made about the later fate of such a patient, whether he can earn his living and in general behave as a normal citizen should do, *some months or years after* treatment has ceased. A knowledge of the ultimate condition of injuries and fractures and the length of time necessary for full recovery is the foundation of a sound prognosis, so necessary in compensation cases. Owing to the rapidity with which patients of the hospital class change their place of abode they are not always easy to trace, but of about 400 cases rather more than one-third have been seen or have sent reports of themselves from one to two years after the original injury, and of others there are notes of the progress after several months.

The views here set forward are based on a study of cases personally seen and supervised in the massage department of the London Hospital for the last two and a half years; the figures given are taken from a continuous series of nearly 400 cases taken for a period of about 18 months during that time. My thanks are due to the surgical staff of the London Hospital, under whom these cases have been previously in the wards and in the out-patient department, for their courtesy in allowing me to make use of their cases for this purpose.

Joints Considered.

There are six large joints in the limbs all of which are fairly frequently subjected to violence; of these the hip and the knee are not considered here for the following reasons. Injuries about the hip are usually found in old people, who, if the damage be sufficiently grave to be worthy of attention, are, as a rule, rapidly deported to infirmaries and are seldom seen in the out-patient department of a large hospital; consequently the numbers seen in our massage department were not enough to form any sort of series. Injuries about the knee consist chiefly of fractured patellæ and internal derangements of cartilages or synovial fringes; the main treatment is therefore operative, depending on the proper application of the Listerian method, though, nevertheless, movement and exercises play a most important part in the after-treatment. It is more fitting that the results should be described by those who have performed the operations. There remain to be considered the shoulder, elbow, wrist, and ankle. The treatment of injuries in these positions is usually by fixation of various kinds, massage, and movements, both active and passive. Interference by open operation is seldom required in these cases, though there can be no question that under certain conditions wiring, suturing, screwing, &c., of bone by the open method can be used to great advantage.

Varieties of Injuries.

The injuries coming under notice are fractures (including injuries to epiphyses) and dislocations; sprains form a small proportion of the cases treated. Of fractures those only are taken which are found within about two inches of a joint. This is, perhaps, an arbitrary line of distinction to take, because really all fractures of long bones involve the neighbouring joints, if not at the time of injury, at any rate during, and unfortunately sometimes owing to, treatment, as is shown by the number of stiff knees after fracture in the middle of the femur and stiff ankles after fracture of the middle of the tibia. In a practical survey of the results of fractures it is the joints which are to be considered, for the joints, and not the bones, are the units of function.

General Considerations regarding Fractures.

The ultimate goal to be attained in these cases is the restoration of function—i e, the limb must be able to work. It must never be forgotten that bone is not the only tissue involved in fractures, or, indeed, the most important in a considerable number of cases. Few fractures, particularly in the vicinity of joints, are perfectly simple, but all the neighbouring tissues, muscles, tendons, vessels, nerves, and joints participitate more or less in the catastrophe, and to each of these due attention must be paid. The relative importance of each component part of the limb must be respected in treatment. By regarding the limb as a whole, and by treating it as such and not merely looking after the broken bone, we shall obtain the best results most rapidly. A patient will not feel very grateful for having the bones of his limb restored to the symmetry of an Apollo Belvedere if at the same time the joints, tendons, and muscles around are affected with the same statuesque rigidity.

It is not altogether easy to define when function is properly restored; one is often surprised by the inability to perform heavy work on the part of a patient whose limb on examination appears to have complete mobility and strength. Malingering is often suspected and sometimes rightly, but the fact must not be lost to view that in many walks of life a fitness and efficiency are required such as is possessed by a trained athlete. We all are aware what a comparatively slight strain of muscle or joint will put us completely off our stroke at any game, so it is not difficult to believe that men whose business it is to climb unstable ladders, sling about hundredweight bales, or get around amongst whirling machinery may be incapacitated by small defects of which there are no signs in the consulting-room. In addition to these, cases of clear functional or hysterical disability turn up from time to time.

Fixation versus *Movement.*

In the management of fractures, particularly those near joints, two apparently opposing principles of treatment present themselves, fixation and movement. The former includes splinting, strapping, bandaging, and operation; the latter massage, passive manipulation, and active movements. The former, i.e., fixation, stands for apposition of the ends of the fragments and maintenance of good position; the latter for free circulation of blood and lymph, mobility of joints and tendons, quick return of muscular power, and, finally, more rapid union of bone, provided that movement be not of such a nature as will cause displacement and prevent union. Slight movement between the fractured ends is of not the least harm, indeed may be beneficial after the first few days; before that it may increase hæmorrhage, exudation, and clot between the ends of the fragments; but movement must on no account be enough to cause displacement of the fragments, unless in a direction to improve their position. Movement and displacement of the fragments are very different things and must be carefully distinguished. The question often arises in treatment as to whether the bone or the parts about it are the more important. This depends on the power of repair of the patient, a property which diminishes with the age of the patient and the ageing of his blood and lymph vessels. Beyond a certain age, which varies greatly in different patients, but which may roughly be put at from 40 to 50, the tendency to thrombosis, œdema, osteo-arthritis, and adhesions in joints and tendon sheaths very rapidly increases. Therefore in persons of advancing years it is necessary to look to the functions of joints, tendons, muscles, nerves, and vessels rather than to an exact return of the bone to its anatomical structure and shape. We may safely put up in plaster the joint of a child for months, and yet speedily reproduce a moveable joint, as is well seen in the treatment of tubercular joints and congenitally displaced hips; but if we fix the joints of men of 40 and upwards even for a week we run a grave risk of producing a fixity and rigidity which will take months to recover and may result in permanent disablement; all the more is this the case where the joint has been previously injured.

In the leg, again, restoration of the anatomical shape of the bones is more important than in the arm, since a shortened leg means some degree of limping. At the same time there is no doubt that more patients limp, and limp more grievously, from stiff ankles than from shortened legs. Unless the amount of shortening be gross, such as an inch or more, the effect of shortening on the gait is but trifling.

Far more important than shortening is a deficient restoration of the axis of the limb, or allowing the fragments to form a kink; owing to this, the strain of the body weight, &c., is not applied in the proper direction, and such conditions as flat-foot, knock-knee, and bow-leg arise.

Fixity of the ends of fragments does not tend to make them unite, often the contrary results, as the efforts to keep them still with splints, strapping, &c., cause their nutrition to be so impaired from deficient blood and lymph supply that union is slow; whereas in cases of delayed union repair is found to be greatly accelerated by the more vigorous sorts of massage—e.g., deep kneading (*vétrissage*), hacking, and clapping—in the course of which slight movement of the ends of the fragments is inevitable.

The use of splints, strapping, bandages, wires, bolts, and bars, is to produce apposition of the fragments and not rigid fixation, which is unnecessary. In cases where good apposition of the fragments cannot be attained without undue pressure from splints, bandages, &c., it is best to have recourse to open operation and the various methods of bone suture, screwing, &c., as is well shown by the good results of fractured patella, spinal fractures, and so forth. Except in certain situations, however, open operation is seldom necessary. Taking now the special regions involved:—

The Ankle.

Under this heading are classed sprained ankle, fractured lower end of the fibula, Pott's and Dupuytren's fracture, fractured internal malleolus, and separated epiphyses. There is a class of case closely allied to this group to which brief allusion may be made—viz., cases of stiff ankle with foot-drop and contracted tendo Achillis following on fractures of the tibia and fibula in their middle and lower third. These cases result from failure to keep the foot at right angles, or, in other words, from a slipping up of the heel, with the leg put up on the L-shaped back and side splints. This is an important reason for taking down and inspecting these fractures frequently, moving the ankle-joint and seeing that the foot remains in proper position. This trouble is, I am sorry to say, not uncommon, and is the chief source of disability in fractures of the tibia and fibula.

Of cases more immediately involving the ankle, the commonest group attending our department consists of Pott's fractures—i.e., a fracture of the lower part of the fibula with dislocation of the ankle, associated with fracture of the external malleolus or rupture of the external lateral ligament. The injury is usually due to a *wrenching of the foot outwards, rarely by a wrenching* inwards; of 37 cases only three showed inward displacement. In practice one sees every grade of damage caused by eversion of the foot, which may be arranged in the following order: 1. Fractured fibula about three inches from the lower end. 2. Stretching and tearing of the external lateral ligament, a form of sprained ankle, liable to end in flat-foot. 3. Fractured internal malleolus. 4. A combination of 1 and 2 or 1 and 3—*i.e.*, fractured fibula with dislocation of the ankle or Pott's fracture. 5. The same as 4, but with marked displacement of the foot backwards due to rupture of the anterior and posterior ligaments of the ankle-joint, with displacement of the anterior tendons and rupture of their tendon sheaths. This is a severer variety of Pott's fracture. 6. Dupuytren's fracture in which in addition to the damage of 4 or 5, the lower end of the fibula is torn from its attachment to the tibia with great widening of the ankle. Of these, the last is quite rare, fracture of the internal malleolus alone not very common; the others are everyday cases. My impression is that rupture of the internal lateral ligament in Pott's fracture is more commonly found than fracture of the internal malleolus, though the latter condition is fairly common.

It is stated that Pott's fractures are frequently compound. I have not found this to be the case; only one case of compound fracture occurs in the present series, and this is in accord with my experience of a large number of Pott's fractures seen at the London and Poplar Hospitals. Compound fractures of the tibia, about the middle, are far more common. Perhaps the present infrequency of compound fractures of the ankle is the result of the teaching of more enlightened first aid to the public, for one sees a good many fractures about the ankle which are nearly compound and which, with rough or bungling manipulation, might easily become so. The condition (5)—i.e., Pott's fracture, with marked backward displacement of the foot—is not common; it does not occur in *more than one or two cases out of ten Pott's fractures.* The ligaments and tendon sheaths torn in this condition I have ascertained from some experiments with cadavers. It is fortunate that this backward displacement is uncommon, for when present it is apt to be overlooked, especially when there is much swelling of the ankle—a condition, again, likely to obtain owing to the greater violence necessary to produce the rupture of ligaments in consequence of which the displacement occurs. In such a case it is often extremely difficult to make out the position of the foot with regard to the ankle; it is only by realising how much the heel normally projects backwards that it is possible to estimate backward displacement and by comparing with the sound side. X rays will, of course, make the matter clear, but they cannot always be obtained. With practice the eye is the best guide, and excessive projection backwards of the heel can be recognised at once, and it is most necessary so to do, for if not corrected there will be later greatly impaired dorsiflexion of the foot—i.e., partial equinus—with all the accompanying disability from bent-kneed progression, shortened stride, and limping.

As to results, the following classes have been made: (*a*) Very good, when the patient can walk any distance and do a hard day's work—e.g., as engine-driver, carman, stevedore, &c.—whether the ankle appears anatomically perfect or not. As a matter of fact, few of the cases showed no signs of the fracture afterwards. (*b*) Good, when the patient can walk and work well, but with a slight limp of weakness. (*c*) Fair, when the patient can walk but tires early. (*d*) Bad, when the patient can only limp a few hundred yards.

Pott's fracture.—Of recent Pott's fracture 34 came under observation *and treatment; of these, two were lost sight of* too soon to be of any value. Put in a tabular form, with the number of months after injury the cases were followed, the results are:—

	Seen after				
	2-3 months.	4-6 months.	6-9 months.	18-24 months.	Total.
Very good ...	—	1	—	7	= 8
Good	6	3	1	3	= 13
Fair	5	4	—	1	= 10
Bad	—	—	—	1	= 1

That is to say, two-thirds of the cases terminated favourably and were good working results. Of the cases labelled "fair," some probably later would, if it were possible to trace them, be found to be good, as is shown by the small number of cases called "fair" amongst those seen after a considerable time. On the other hand, some of those which appeared fair results after two to three months may have degenerated later into "bad." Three cases of Pott's fracture with inversion of the foot occurred in the series; all did well. Five cases of Pott's fracture of old standing came under notice. Of these, one of two years' standing improved in five months but was not a good result; the patient was unable to do a full day's work. A [illegible] accident [illegible] at the en[illegible] soon to be of any value.

Length of treatment.—The length of time these cases remained under treatment was c[illegible] varying from three to seven months [illegible] rage time being three to three and a half months. The results, however, in the cases where treatment was prolonged were good.

The following conditions were found to increase the length of treatment necessary: 1. Œdema of the ankle and leg, which occurred to a marked degree in five of the cases where treatment was of long duration, and is one of the most troublesome things in fractures about the ankle; it is, no doubt, due to thrombosis of veins and lymphatics of varying extent, and its frequent occurrence and great persistence is a plea for early massage in these cases. 2. Long splinting, a probable cause in three cases. 3. Severity of the original injury, in one case a Dupuytren's fracture and in another very bad backward displacement of the foot, both of which imply a greater degree of violence and consequent damage to soft parts with a correspondingly longer period of convalescence. 4. Compound fracture. 5. Debility, in a patient who died a few months later from phthisis. The case which ended quite badly was rather old (60 years) and developed bad osteo-arthritis of the ankle and flat-foot. Similar changes to a less extent developed in some of the cases of which the termination was fair.

Fractured fibula.—Of fracture of the lower end of the fibula 17 cases were treated, of which one was lost sight of too early to be of value; tabulated, as in the case of Pott's fractures, the results are as follows:—

Seen after	2-3 months	4-6 months	12-24 months		Total
Very good	1	—	6	=	7
Good	2	4	—	=	6
Fair	1	2	—	=	3

The length of treatment varied from five to 12 weeks, the average length being six weeks. As might be expected, the results are better and the treatment shorter here than in Pott's fractures. In the cases which required the longer treatment there was some damage to the internal lateral ligament, although not sufficient to constitute a Pott's fracture.

Fracture of internal malleolus.—Three cases of fracture of the internal malleolus alone occurred, and of these two were good results when seen three and 20 months later respectively; one case was not traced. The length of treatment of these cases varied from six to 12 weeks.

Sprained ankle.—Of nine cases of sprained ankle five were perfect results; four were only fair, the patients being troubled with varying degrees of flat-foot. Treatment was, as a rule, only necessary for a month or less; in a few cases several months' treatment were necessary, in one case as much as five.

Taking the results as a whole, they are very fair, but the time expended in treatment was considerable; the greater the damage to the soft parts the longer was it necessary to continue treatment. At any rate, this is a less gloomy picture than that given by some writers on this subject; one reads, for instance, that cases of Pott's fracture lose 75 per cent. of their working value, or that satisfactory recovery from Pott's fracture is almost unknown. A great deal depends on the way in which they are treated.

Treatment.—The treatment of the cases quoted here varied at the commencement according to the views of the house surgeon. As a rule, for Pott's fracture, fractured internal malleolus, and fractured fibula, splints were used for two to four weeks with or without early massage. The splints used were either the L-shaped back and side splints or the external L-shaped splint, as will be described later. In a few cases plaster bandages were applied for some weeks before massage and movement were used; it is noteworthy how much longer treatment these cases required, yet in the end with perseverance and unflinching toil the results even here were not to be despised. As a rule, after three to four weeks in splints the cases were sent out in a divided, removeable plaster (Croft's), and massage and movements instituted.

The following method we have found most serviceable in Pott's fractures, fractures of the internal malleolus, and some cases of fractures of the lower end of the fibula where there is reason to think that the internal lateral ligament has been strained, and is the method which has been in use at Poplar Hospital for some years. Bearing in mind the troubles which arise from imperfectly conducted treatment—viz., everted, splay or flat-foot and equinus, or both—the foot must be put up in a position of inversion, of dorsiflexion to a right angle, and without backward displacement. An anæsthetic may occasionally be necessary, especially in the variety with displacement backward. The splint which best answers this purpose is the L-shaped external splint with a foot-piece, known to us as a Sharpe's splint, but described in some books as a Roughton; the latter in our nomenclature consists of a Sharpe's splint with a small projecting back-piece behind the heel to prevent backward displacement of the foot. We find a small separate splint about eight inches long equally efficacious in preventing this displacement. The following are the points in applying the splint. 1. A good pad should be placed under the outer side of the foot between the latter and the splint and below the external malleolus; this pad inverts the foot and at the same time protects the internal malleolus from pressure. 2. The knee must be very acutely flexed; as a rule in pictures of this sort of splint the knee is represented as only slightly flexed. To act properly the thigh should be flexed on the belly and the leg on the thigh, thus relaxing as far as possible the tendo Achillis and greatly obviating any tendency to drawing back the foot and plantar flexion of the ankle. 3. The bandage is arranged as follows: it is pinned to the hinder edge of the splint before the leg is placed in position behind the ankle; it is then brought forward under the ankle between the latter and the splint and back again over the ankle and the small, separate posterior splint and so round the whole splint and down over the foot and foot-piece. This arrangement pulls the tibia back and pushes the heel forward and usually suffices to keep the foot in good position. Should this plan fail, it will be better to have recourse to tenotomy of the tendo Achillis to relax its pull on the heel rather than use strapping.

No doubt good position can in many cases be attained with the ordinary L-shaped back and side splints, but only if there is no backward displacement; moreover, with back and side splints there is a greater tendency for the heel to slip up, producing equinus, and there is nothing to produce inversion of the foot. Another great benefit of this splint is that massage may be used early without displacing the limb or the splint. Having now got the foot in good or even over-corrected position the rest of the treatment consists of massage followed in turn by passive and finally active movement. Massage may commence as early as the third day, dependent on the liability to displacement and the skill of the masseur. If there is any doubt on the latter point the surgeon had better see to the massage and movement himself, or if time does not permit of this wait a week or ten days before allowing the masseur to perform; this will mean somewhat longer treatment. A skilled masseur should, however, know when the fracture is in good position and how to counteract any tendency to displacement, and if he can deal with the case from the start treatment will be shortened. For the first few days he will confine himself to stroking upward (*effleurage*) the foot, ankle, and calf to remove blood clot and exudate from the tissues, and will move the toes without removing the limb from the splint, an easy matter on a Sharpe's splint; after from seven to ten days gentle movement of the ankle may be instituted, taking care that the direction is such as corrects deformity—viz., dorsiflexion and inversion of the foot, at the same time the calf muscles may be more vigorously massaged (*pétrissage*). After three weeks the foot may be placed in good position in a divided plaster and treated with massage and movements as an out-patient. The patient should be able, as a rule, to put the foot to the ground in six weeks, but old people and bad fractures, with much bruising and œdema, must not put weight on the foot for much longer. Each case must be judged on its merits. Placing weight on the foot too early will certainly lead to flat foot; it is better to wait too long than not long enough. For a week or two before the foot is placed on the ground active exercises can be practised; these consist of flexion and extension of the ankle and toes, together with a rotary inversion of the foot. When the foot is placed to the ground the same exercises are continued, the patient rising on the toes and heels alternately, with gradually increasing weight on the foot. At this juncture it is important to attend to the gait of the patient; most patients of the hospital class walk naturally with the foot splayed out to some degree; after an injury to the ankle this fault is exaggerated, especially if the dorsiflexion of the foot be impaired.

We must teach them to walk with the toes pointing straight forward, and to help with this a very good exercise consists of walking with the toes turned in as far as possible, taking very short steps, a favourite exercise for flat-foot cases. With such exercises a well-set case will soon walk well and powerfully. Unfortunately, many cases came under notice two or three weeks after the accident in which the position is not all that could be desired; there is outward displacement, outward splaying, and impaired dorsiflexion, separate or combined, and in varying degrees. Here the treatment is similar but prolonged, much passive movement in the direction of dorsiflexion and inversion being necessary. Still more important are the active movements of the same nature.

In some rebellious cases skipping was adopted with moderate success, but it was found that, although useful in some cases of early flat-foot, yet in these cases of fracture the slower movements, such as rising on the toes and heels, were more beneficial, and that if a patient could skip he was, as a rule, able to follow his ordinary avocation.

The treatment of the other injuries about the ankle should be conducted on the same lines, but as a rule the foot can be placed to the ground much earlier. Where there is certainly no displacement no splint is required; when in doubt it is best to splint in the manner described, because the troubles of ankle cases are always in relation to the conditions of splay-foot and equinus.

A type of sprained ankle is sometimes met with which may be regarded as a potential Pott's fracture—i.e., although the fibula is unbroken yet the internal lateral ligament is damaged to such an extent that it will stretch if weight be placed on the foot too early, causing flat-foot. Similarly in cases of fractured fibula the same structure may be so damaged that, although there is no displacement at first, it will give way when walking is commenced, having then the typical appearance of a badly set Pott's fracture. Great care is necessary to avoid falling into this trap. The question of instrumental support may arise and if adopted should be used early; cases which are not in the best position would doubtless be improved by a walking instrument double to the knee with a valgus strap and possibly a toe-raising spring. In cases which are not progressing favourably the timely expenditure of two or three guineas early might well save the continuous drain of charity doles in later days.

(To be continued.)

PULMONARY TUBERCULOSIS TREATED BY DEEP MUSCULAR INJECTION OF MERCURIC SUCCINIMIDE.

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THE employment of mercurial preparations for the treatment of consumptives is no new departure. When one of us (J. E. S.) received his first appointment as assistant physician to the Mount Vernon Hospital 25 years ago all the patients of his predecessor in the out-patient department were treated with mercury, usually in the form of the perchloride. In more recent years the treatment of pulmonary tuberculosis with mercury has been given up, the success obtained being hardly sufficient to counteract the disadvantages attending a prolonged course of mercury administered by the mouth.

A medical officer of the United States Navy (Surgeon Barton Lisle Wright[1]), having observed that the administration of mercury to syphilitics with tuberculosis of the lungs resulted in a marked improvement in the pulmonary lesion, employed this remedy in cases of consumption in non-syphilitic individuals with results which were decidedly encouraging. He administered the mercury by deep muscular injections of "tabloid" hypodermic mercury succinimide (gr. 1-5th) and found that both the local and the general conditions materially improved. Messrs. Burroughs and Wellcome kindly placed at our disposal a supply of these tabloids for the purpose of a further trial, the main objects in view being to see if the favourable report of the former trials were corroborated and to determine if possible how long treatment must be continued in order to effect a cure. It should be noted that in all cases the administration of the drug is ancillary to the hygienic or sanatorium treatment, and that it is not possible to decide to what extent any improvement observed may be attributed to the effects of the injections. Nevertheless, in certain of our cases which had been for some time under treatment before the mercury injections were commenced improvement was certainly more marked and more rapid when the mercury was given than it had previously been. Though we have experienced none of the startling results reported from America the results of the injections are sufficiently encouraging to justify further and more extended trials with this remedy. We are, however, unable to give any decided answer to the second subject of inquiry, as to the length of time the treatment must be continued in order to effect a cure, if cure can be brought about. Our trial of the remedy has extended over a period of four months and it would be at least premature to say that any of the cases are cured. We selected for trial cases in various stages of the disease in the lung and a few cases in which there was tuberculosis in the larynx or other parts as well as in the lungs.

The method of treatment recommended by Dr. Wright is as follows:—

"[illegible] *de gr. 1-5 No. 98 is the* [illegible] m. of sterile water, con- [illegible] at another place.

The treatment is started with one injection gr. 1-5 every other day [illegible] by a two weeks' [illegible] iodide gr. 5, two [illegible] lrice daily. Then one week's rest from medication, after which the injections are resumed, and so on.

This treatment was undertaken in 14 cases but after two injections one case had to be abandoned. After the first injection the patient complained of such violent pain down the leg that one was almost led to believe that the sheath of the sciatic nerve had been penetrated, but on a subsequent occasion the other buttock was merely pricked with an ordinary sterile needle when the patient complained of the same violent pain. No further treatment was attempted in his case.

Of the 13 patients who were treated some for various reasons—wishing to return to work, domestic trouble, having to undergo a surgical operation, &c.—were not able to remain as long in hospital as one could have wished in order to give it a fair trial. The buttock was chosen as the most convenient place for injection, and, of course, every precaution was taken to sterilise both the needle and the part injected. For each injection 1-5th grain was dissolved in 10 minims of distilled water; this was injected into alternate buttock every second day, Sunday being excluded. In the case of the females no injection was given during the menstrual period. In all cases careful attention was paid to the teeth and a mouth-wash was used after each meal.

While none of the patients objected to the form of treatment it cannot be said that any of them liked it. With few exceptions there was always a brawny lump, varying from the size of the tip of one's little finger to the size of one's thumb or a little larger at the seat of injection for about 48 hours. On one occasion a lump arose in about half an hour almost the size of one's closed fist; the same evening it was about half that size, and next morning it had almost disappeared.

All the patients complained of a slight burning or pricking pain at the seat of injection for a time, varying from 6 to 12 hours. This was more noticeable when the injections were first commenced, and later the patients complained less of it. Three of the patients felt faint after the injection on three or four occasions and one of them had a slight vomiting attack immediately after. The female patients complained less of the pain than the males. This

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[1] The Treatment of Tuberculosis by the Administration of Mercury, Washington Government Printing Office, 1908, and New York Medical Journal, August 29th, 1908.

Table giving Particulars of 13 Cases of Pulmonary Tuberculosis treated by Deep Muscular Injections of Mercuric Succinimide.

Sex and age; duration of illness.	Physical signs.		Temperature and pulse.		Weight.		Tubercle bacilli.		General condition on discharge.	Duration of treatment.	Remarks.
	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.			
					st. lb. oz.	st. lb. oz.					
F., 35; 10 years.	Crepitations not very moist, all over right side.	Crepitations only apex lower lobe, right side.	97°–102° M. 72 E. 104	97°–98·4° M. 72 E. 90	9 4 8	10 2 0	+	+ Decreased.	Satisfactory.	4 weeks.	Chronic; arrested.
F., 51; 11 months.	Crepitations not very moist in right upper lobe and left apex + cavity.	Dry crepitations, apex right lower lobe.	98°–99·8° M. 80 E. 94	98°–100° M. 64 E. 96	8 2 0	8 7 0	+	+ Much decreased.	Fairly satisfactory.	7 ,,	Acute; arrested, and then lighting up again.
F., 20; 9 months.	Moist crepitations over left upper lobe and right apex.	Moist crepitations left apex.	97°–98·2° M. 68 E. 88	97°–98° M. 76 E. 90	8 11 0	9 6 0	+	+ Increased.	Satisfactory.	7 ,,	Acute; almost arrested.
F., 28; 2 years.	Crepitations moist, right upper lobe + cavity.	Few crepitations, back right apex.	97·6°–100·2° M. 84 E. 104	98°–99·4° M. 96 E. 100	7 9 2	8 6 8	+	+ Less.	Satisfactory.	6 ,,	Arrested.
F., 23; 4 years.	Fairly dry crepitations over both apices.	Fairly dry crepitations over both apices.	97·8°–98·2° M. 78 E. 83	97·4°–98·2° M. 76 E. 83	7 7 6	7 12 0	+	+ Less.	Satisfactory.	8 ,,	Chronic; arrested.
M., 39; 3 years.	Moist crepitations, right base, with rhonchi all over.	Nil.	97°–98·4°	97°–98°	9 5 0	10 7 0	+	—	Satisfactory.	8 ,,	Arrest.
M., 21; 2 years.	Dry crepitations over left upper lobe.	Nil.	97°–98°	97°–98·4°	9 6 8	10 9 8	+	+ Much less.	Satisfactory.	4 ,,	More or less chronic; arrested.
M., 30; 7 years.	Crepitations moist at apex, all over right side; crepitations left apex	Dry crepitations, left base.	96·6°–98·4° M. 72 E. 98	97°–98·4° M. 68 E. 92	9 7 8	9 12 4	+	+ No change.	Fairly satisfactory	8 ,,	Chronic and inactive.
M., 15; 4 months.	Moist crepitations all over left side.	Few dry crepitations left apex.	97°–102° M. 80 E. 96	97°–98° M. 76 E. 92	7 8 0	9 0 0	+	+ Less.	Satisfactory	7 ,,	Acute; arrested.
M., 16; 18 months.	Crepitations over right upper lobe + cavity.	Few dry crepitations over right apex; few left base.	97°–99·2° M. 72 E. 100	97°–99° M. 80 E. 96	6 10 8	7 9 0	+	+ No change.	Fairly satisfactory.	8 ,,	—
F., 17; 3 months.	Moist crepitations all over left side and right apex.	Fewer and drier crepitations over same area.	97·4°–101·8° M. 92 E. 122	97·8°–99·4° M. 96 E. 112	7 6 0	7 7 0	+	+	Bad.	5 ,,	—
M., 31; 5 years.*	Crepitations all over right side.	Crepitations more, and these all over right side.	97°–101° M. 72 E. 100	97°–100° M. 72 E. 108	9 1 12	9 3 0	+	+	Worse.	5 ,,	Left for surgical operation.
M., 29; 2½ years.	Moist crepitations over left upper lobe; few moist crepitations + cavity right upper lobe.	Crepitations all over left side and right upper lobe.	97°–101° M. 92 E. 108	97°–101·2° M. 90 E. 100	8 12 8	Not known.	+	–	Worse.	5 ,,	Tuberculous laryngitis.

* Lung trouble. Hip-joint disease three years old. Knee-joint disease five years. Leg amputated then.

the fact that nature has provided them with more adipose tissue in that region and therefore sitting down would cause less discomfort.

The patients treated—six females and seven males—varied in age from 15 to 51 years; all, with one exception, were more or less advanced cases, three having cavities and all had tubercle bacilli in the sputum.

In one case it was noticed that the sputum was swarming with bacilli on the first examination. About ten days later they were decreased by half, and in another week one had to look carefully for them, there were so few. In another case, though the physical signs decreased the bacilli increased. In most of the remaining cases the bacilli decreased, and in one case none could be found after a couple of weeks' treatment.

A remarkable fact which applied to most of the cases was the rapidity with which the physical signs decreased. This continued for the first four or five weeks. Then, with two exceptions, most of the patients arrived at a stage where no further change could be made out, and some of them even returned to their former condition. In two cases the physical signs disappeared altogether.

THE SEWERAGE OF BUDE (CORNWALL).—The Bude sewerage works, which have been erected at a cost of £14,000, were formally opened on July 1st by Mr. A. C. Thynne, in the presence of a large gathering.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis has purchased the remainder of the stock of the New Sydenham Society's publications, comprising the collection of volumes on medicine and surgery, the "Pathological Atlas," the "Lexicon of Medical Terms," and the "Atlas of Clinical Medicine, Surgery, and Pathology," issued by the society during the years 1859–1907. Many of the works were of a pioneer character when issued by the society and have since acquired a historic importance. The number of copies of each book has been of necessity limited on account of the heavy expense of warehousing a larger stock, and of many of the volumes only a small number remained over.

NOTES ON THE USE OF X RAYS IN THE TREATMENT OF MALIGNANT DISEASE.

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THOUGH the X ray treatment of rodent ulcer is now so successful that it will probably become the routine method of dealing with that disease, it is less generally recognised that in other forms of malignant disease X rays have in some cases a certain definite value.

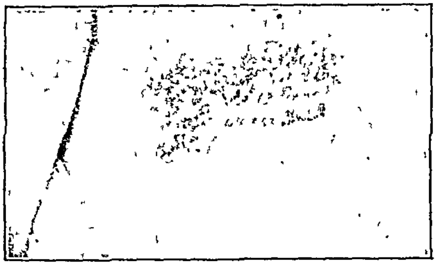
During 12 months beginning in March, 1907, 31 cases of malignant disease, excluding rodent ulcer, have been treated with the X rays at Guy's Hospital. These cases are here recorded with a view to showing the uses of this form of treatment. Of these cases 23 were inoperable, the remaining eight having been sent immediately after operation for X ray treatment in order to prevent recurrence. The effect of treatment most frequently observed in the inoperable cases was the relief of pain. In 13 cases this relief was well marked, and it extended over weeks or months, and where tenderness was present this also subsided at the same time. The pain, which was variously described as "pricking and shooting" or "dull and aching," was relieved in all three forms of malignant disease, the relief being more complete but of shorter duration in the more rapidly growing tumours. Except for this difference, growths which were dissimilar microscopically seemed to respond to treatment in the same way. After a single treatment to a tumour in which there is pain it becomes easier within 24 hours and remains so for a few days, the ler[illegible] X rays given. It [illegible] and gradually re[illegible] so severe as to keep the patient awake at night sleep becomes possible after treatment.

The relief of pain is followed by the diminution in size, and in some cases the disappearance, of the tumours. Malignant glands in the neck and axilla, subcutaneous nodules in the skin, and in one case a secondary deposit in the sternum two inches in diameter cleared up. In malignant ulcers the relief of pain is followed by a diminution of the discharge; if offensive, it loses its foul smell, and finally the ulcer may heal. Ulceration was present in seven cases and in six some improvement was obtained. Figs. 1 and 2 show the improvement in Case 2 at an interval of two months, and two months later the patient was almost well. Unfortunately no photograph was taken then, and while away on a holiday death from lobar pneumonia occurred.

In Case 10 there were two large fungating masses on the inner aspects of the buttocks, and there was a discharge which was so offensive that it was necessary to burn fumigating pastilles in the ward while the patient was being treated. After a few weeks of treatment the discharge became much less and lost all its offensiveness, and the fungations became smaller and cleaner. In Case 28 the discharge was so offensive that it was noticeable to anyone entering the room in which the patient was while the dressings were still on, and so profuse that though thick dressings were changed four times a day it always soaked through to her clothes. It soon lost its offensiveness and became less, and at the present time the ulcer has to be dressed only twice a day.

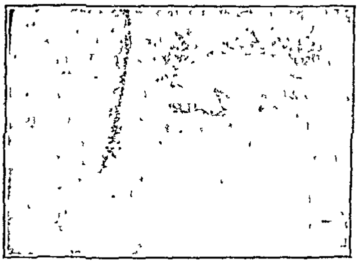
The local improvement is associated with an improvement in the general health of the patient, as shown by the fact that the appetite improves and that patients look and feel better. This improvement may be due to the relief of pain, the increased amount of sleep, the drying up of an offensive discharge, or the mental impression produced on the patient by the use of the complicated apparatus with the noise and sparking which are unavoidable in X ray work. Though one or more of these factors may be sufficient to account for the general improvement in some cases, in others they seem inadequate. In this connexion Cases 15 and 18 are of special interest. In both there were cachexia, loss of appetite, and daily vomiting. No ulceration was present and pain was absent in Case 18. After the first treatment the vomiting

FIG. 1.



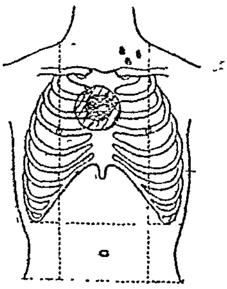
Case 2, atrophic scirrhus of the breast, March, 1907.

FIG. 2.



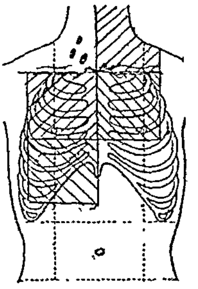
Case 2, May, 1907.

FIG. 3.



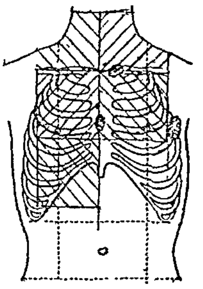
Case 3, sarcoma of breast.

FIG. 4.



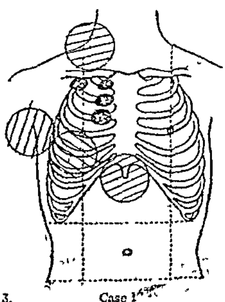
Case 3 three months later.

FIG. 5.



Case 3 eight months later than Fig. 3.

FIG. 6.



Case 1[illegible]

ceased, and the change in appearance was so noticeable that both patients said that their friends had remarked upon it. Both became worse on going to the seaside and improved again when treatment was recommenced. Subsequently the tumours became too numerous for treatment and the patients went down-hill. A possible explanation is that malignant cells produce an internal secretion which is inhibited by X rays, that this secretion circulating through the body produces a cachexia, and that it is finally excreted into the stomach, there producing a distaste for food and in some cases vomiting.

The use of X rays in influencing the occurrence of secondary deposits is shown in Cases 17 and 3. In Case 17 (see Fig. 6) the shortness of the history, the enlargement of the glands above the clavicle, the age of the patient, and the microscopical appearance of the tumour all point to a very malignant form of new growth. The areas X rayed immediately after operation were those in which it was thought most probable that secondary deposits would occur—viz., the scar, axilla, the supra-clavicular region, and the epigastric angle. Tumours which were tender and in which shooting pain was present appeared some weeks later under the centre of the clavicle and in the inner ends of the first, second, and third ribs—i.e., in those parts of the front of the right side of the chest which had not been X rayed. One treatment was then given to the painful places and the pain was relieved. It was then thought that the tumours were not sufficiently definite to justify the conclusion that they were cancerous and the treatment of these swellings was omitted. After a time the pain returned and the tumours increased to such a size as to make it clear that they were malignant in nature. They were then X rayed regularly and completely, and they disappeared in a few weeks. In Case 3 (see Figs. 3, 4, and 5) there was a large swelling in the sternum secondary to a growth of the breast which had been removed six years previously, and when first seen no enlarged glands could be felt in either supra-clavicular or axillary regions. The only place X rayed was the swelling itself. A fortnight later enlarged glands were felt above the left clavicle, there was pain in this region as well as down the left arm, and attacks of difficulty in breathing which resembled asthma were experienced. This part was X rayed and a fortnight later there was no pain above the clavicle or in the left arm and the attacks of dyspnœa had stopped. Some months later large glands were felt above the right clavicle; these, like the glands on the left side of the neck and the tumour in the sternum, cleared up under X rays. About five months after the treatment was started the patient became free from pain and said that she felt perfectly well and this state of well-being continued for about three months, when she began to go down-hill. Small nodules of growth appeared in the lower part of the sternum, at the inner end of the left clavicle, and near the lower border of the left pectoralis major, that is each nodule appeared near the line dividing two different areas of treatment. This probably was due to the fact that the rays at the edge of a four-inch square are less intense than they are at the centre. The amount of X rays given was sufficient to prevent the occurrence of secondary deposits in the centre of the areas, but not at the edges. If this explanation is correct better results might be expected if the separate areas treated are reduced in size. These two cases seem to make it advisable to X ray, not only those places in which secondary deposits are likely to occur, but also the parts between them and the primary growth. In the case of cancer of the breast it is advisable to X ray the whole of the front of the chest, the neck, and the axillæ. Probably the lives of most of the patients in whom improvement has been noticed have been prolonged for some months, but so far nothing further can be claimed. As all the patients treated have been out-patients it has not been possible to ascertain the cause of death with certainty in those cases in which it has occurred. Some of the cases were so advanced as to be almost hopeless from the first, and in these death was probably due to internal deposits which could not be affected by treatment. In others the early signs of dermatitis prevented sufficient treatment to be given to completely arrest the progress of the growth. A dermatitis when it has subsided leaves behind it an irritable condition of the skin to X rays which lasts for a considerable time.

The irritable condition just mentioned and the period of its duration vary with the degree of dermatitis produced, and therefore the earliest signs are of considerable importance. The first thing to be noticed is a slight bronzing of the skin, which gradually becomes darker. The pigmented parts of the body become bronzed more easily than do those that are not pigmented, and bronzing comes on more quickly in those patients who are dark-complexioned and in those who are advanced in life. From this it follows that bronzing in a person of fair complexion is a more definite indication for leaving off treatment than it is in others. The second stage is a red flush which supervenes on the bronzed area. If larger amounts of X rays are given the intermediate stage of bronzing does not occur. In the third stage the redness increases and the area becomes painful, the pain varying in intensity from being slight and transient to being severe enough to prevent sleep. It is described as burning and smarting, and in the more severe degrees cutaneous hyperæsthesia is present. The patients when questioned say that the pain is quite different in character from that of the cancer, which they describe as being "pricking and darting." This distinction is important when a patient who has been under treatment for some time complains of pain. In the one case it is an indication for leaving off the X rays, while in the other it shows that X rays are not being given in sufficient quantity to check the growth of the cancer. In the next stage the pain increases, blebs form, and a raw surface with a serous discharge is left. This stage was reached in four cases. In all of them the patients were well a month after the onset of the pain; no scarring of the skin followed and treatment was resumed as before, smaller amounts of X rays being given. In these cases the sequence of events was as follows: (1) relief of the cancer pain; (2) onset of the pain due to the action of X rays on the skin (here the treatment was left off); (3) onset of cancer pain which became worse; while (4) the pain from the X rays gradually subsided.

If the amount of X rays that can be given, after a condition of irritability has been set up, is insufficient to stop the growth of the disease, its progress is retarded, and if ulceration is present the discharge is diminished. In Case 8 the patient, who was being treated for 10 minutes once a week, at first improved considerably. Redness and tingling were set up after some months of treatment and since then it has only been possible to X ray in smaller amounts, with the result that the disease has increased.

The risk of a dermatitis may be diminished, while the effect on the tumour is scarcely altered, by reducing the amount of X rays given at one treatment and repeating it more frequently. Probably if the patient in Case 8, who could come for treatment only one day a week, had come twice a week and had had half the original treatment each time, the effect on the growth would have been the same, and no irritability of the skin would have been set up. In this way the original improvement might have continued.

No really satisfactory method of estimating the quantity of X rays in small amounts has been devised yet. Fairly satisfactory results have been obtained by keeping the following three factors constant: (1) the alternative spark gap of the X ray tube at three inches; (2) the distance of the anode from the skin at seven and a half inches; and (3) the current in the secondary circuit at three-tenths of a milliampère. The length of time of the treatment is varied and is with each patient a matter of experiment. In Case 28 five minutes' exposure twice a week produced in two months smarting and redness, with three minutes' exposure twice a week the pricking of the cancer returned, while under an exposure of four minutes twice a week the patient is doing fairly fell.

Since all forms of malignant cells seem especially susceptible to the action of X rays it is not surprising that the remaining form of embryonic cell found in the body is also destroyed by X rays, as shown by the several instances of X ray workers who have become sterile. The cells from which the spermatozoa are formed are not embryonic, and it might be expected that the sterility would not be permanent. Evidence on this point is not easily obtained, but Laquerrière has published a case of transitory azoospermia. In this case there is evidence, both microscopical and otherwise, of five years' sterility in an X ray worker, followed by recovery after four months' efficient protection from X rays.

Conclusions.—1. In superficial forms of malignant disease X rays may temporarily arrest the course of the disease, relieve the pain, diminish the discharge, and heal up the ulcers. 2. Probably X rays prevent the occurrence of superficial secondary deposits. 3. Embryonic cells are more easily destroyed by X rays than are normal cells.

Details of 31 Cases of Malignant Disease, excluding Rodent Ulcer, Treated with X Rays at Guy's Hospital during 12 Months, beginning in March, 1907.

Case.	Years of age.	First attendance.	Last attendance.	Nature of case.
1	59	March 6th, 1907.	March 27th, 1907.	Growth of tongue. Recurrence.
2	55	,, 11th, ,,	Aug. 1st, ,,	Atrophic scirrhus of breast.
3	54	,, 15th, ,,	Feb. 16th, 1908.	Sarcoma of breast. Recurrence.
4	42	April 10th, ,,	April 29th, 1907.	Mastitis carcinomatoides.
5	45	,, 27th, ,,	June 24th, ,,	Carcinoma mammæ.
6	57	,, 27th, ,,	,, 21st, ,,	,, ,,
7	49	,, 29th, ,,	May 7th, ,,	,, ,,
8	65	June 12th, ,,	*	Epithelioma of lip.
9	50	,, 13th, ,,	Sept. 6th, 1907.	Carcinoma recti.
10	56	,, 13th, ,,	Nov. 21st, ,,	Carcinoma recti. Recurrence.
11	42	,, 24th, ,,	*	Carcinoma mammæ.
12	43	,, 29th, ,,	Aug. 24th, 1907.	,, ,,
13	40	,, 29th, ,,	July 3rd, ,,	Carcinoma recti.
14		July 10th, ,,	Aug. 28th, ,,	Carcinoma mammæ.
15	47	,, 16th, ,,	Oct. 10th, ,,	Melanotic sarcoma. Recurrence in scar in back and other places.
16	50	Aug. 6th, ,,	Sept. 6th, ,,	Carcinoma mammæ. Recurrence
17	29	,, 8th, ,,	*	Carcinoma mammæ.
18	53	,, 8th, ,,	Dec. 6th, 1907.	Melanotic sarcomata.
19	63	,, 15th, ,,	*	Carcinoma mammæ.
20	50	,, 27th, ,,	*	Recurrent carcinoma mammæ (rt.)
21	72	,, 29th, ,,	Sept. 17th, 1907.	Carcinoma mammæ.
22	48	Sept. 2nd, ,,	Nov. 27th, ,,	Recurrent carcinoma mammæ.
23	54	,, 9th, ,,	*	,, ,,
24	48	,, 10th, ,,	Sept. 19th, 1907	Growth of rectum.
25	56	Oct. 11th, ,,	Nov. 6th, ,,	Recurrent carcinoma mammæ.
26	50	,, 15th, ,,	*	,, ,,
27	37	Nov. 4th, ,,	Nov. 22nd, 1907.	Recurrent growth of uterus.
28	36	Dec. 11th, ,,	*	Recurrent carcinoma mammæ.
29	37	Jan. 20th, 1908.	*	Epitheliomatous glands in left groin.
30	45	,, 29th, ,,	Feb. 21st, 1908.	Growth of rectum.
31	43	,, 30th, ,,	,, 21st, ,,	,, ,,

* Still attending for treatment when article was written.

Remarks upon the Respective Cases.

No improvement.

Case 7.—No improvement. Nodules in the scar and in the skin around it

Case 8.—Discharge and pain diminished. Ulcer decreased in size Redness and tingling produced, and since then the ulcer has increased in size

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nodules The
ved. Pain in
s cleared up

Gained three pounds in weight. Gave up attending as she could not

ness and smarting produced by X rays to several areas and vesication in the axilla. At the present time the chest is free from recurrence. Since December there has been pain down the left leg and also œdema. No cause can be found for it, but it is probably similar in nature to the œdema found in the arm in cancer of the breast. Pain in the chest was always relieved.

Case 18.—Vomiting daily. This stopped when treatment was started. There was no pain, but the patient said that she felt better for treat-

missed

lcer has almost healed. The patient has had redness and smarting from X rays. The growth in the breast itself is larger than when treatment was started.

Case 20.—Arm swollen and œdematous (not improved). The shooting pain in the scar yielded to treatment, as also did the enlarged glands in the right supra-clavicular triangle. The pigskin condition of the left breast has cleared up.

so diminished as to make sleep possible. Redness and tingling from X rays produced.

Case 29.—No improvement noticed.

Case 30.—Prophylactic.

Case 31.—Prophylactic.

Devonshire street, W.

A CASE OF SEVERE FACIAL CARBUNCLE, WITH LUDWIG'S ANGINA AND PAROTITIS,

SUCCESSFULLY TREATED BY VACCINES, COMBINED WITH THE ADMINISTRATION OF REPEATED DOSES OF CITRIC ACID.

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AND
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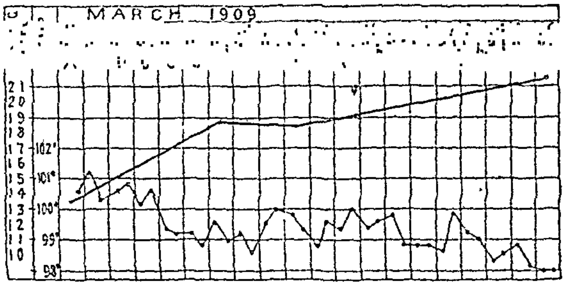
THE patient whose case is now described was a girl, aged 17 years, under the care of Mr. H. B. Walters at Chudleigh. On Feb. 22nd she noticed a pimple on the right cheek, which she squeezed, but no pus exuded. When first seen two days later she had a hard indurated inflammatory mass of about the size of a shilling on the right cheek, adjoining the lip. The temperature was 99° F. Fomentations and a mixture containing perchloride of iron were ordered. On the 27th the upper lip on the right side began to swell, and on the following day pus was discharging by many small holes from its under surface and the lower lip was beginning to swell. The temperature was 101°. On March 1st the symptoms were in every way worse. The local conditions were as follows. The whole of the right cheek was dusky in colour, with an indurated swelling extending upwards from the lip, the eye being nearly closed and the groove on the side of the nose nearly obliterated. She was almost unable to open her mouth, there were sordes on the teeth, and the tongue was very foul. There was no fluctuation present. The temperature was 103°, the pulse-rate was 140, and the patient was in a drowsy, semi-delirious condition and evidently very ill. Mr. Russell Coombe having been called into consultation, Dr. R. V. Solly was sent for with a view to vaccine treatment and he immediately inoculated a dose of 50,000,000 staphylococci (mixed stock vaccine). On the 2nd there was not much change, but the patient's temperature was rather lower and there was some improvement in her general condition. On the 3rd a culture taken from the pustules of the lip gave a pure growth of staphylococcus aureus, from which a vaccine was prepared, and on the evening of the above date a dose of 25,000,000 staphylococci was administered. On the 6th it could be seen that definite improvement had taken place since the last injection. There were less swelling of the upper lip and less discharge, but there was a good deal of submaxillary swelling of a brawny character, suggesting Ludwig's angina. Another injection of 25,000,000 of the patient's own staphylococci was given. On the 7th it was found that blood withdrawn into a Wright's blood capsule, with a view to estimating the opsonic index, clotted almost immediately, and therefore one-drachm doses of citric acid were administered every four hours for four doses. The opsonic index was 1·35. On the 8th the temperature dropped to 99·6° and altogether had a lower range. The patient still improved, and the swelling was gradually decreasing, the right cheek being practically well, but there being a hard indurated swelling in the left cheek. On the 9th one drachm of citric acid was administered for two doses. On the 10th, 11th, and 12th half a drachm of citric acid was administered for 12 doses. After this the temperature became gradually lower in range and the local condition improved. The opsonic index on the 13th was 1·89. On the 15th the left parotid gland became enlarged and painful. Glycerine and belladonna fomentations were applied and 50,000,000 of the patient's own staphylococci were injected on the 16th. The effect of this was to cause some malaise, but on the next morning the temperature was lower. On the 17th half-drachm doses of citric acid were again administered every four hours and were continued for two days. The temperature now gradually fell, the parotid swelling slowly disappeared, and the patient made an uninterrupted recovery, the only sign of the illness that was left being a dimple in the left cheek caused by the skin becoming attached to the mucous membrane of the cheek, just over the opening of Stenson's duct. The opsonic index on the 26th was 2·2, the pulse-rate was 76, and the temperature was 98°.

Remarks by Mr. RUSSELL COOMBE.—This is the fourth case of facial carbuncle that I have seen. The first occurred when I was a dresser under Mr. T. Pickering Pick at St. George's Hospital, the second when I was house surgeon to Mr. Timothy Holmes in the same hospital, and the third was a case I saw in private practice in North Devon some 10 years ago. These patients all died in spite of every effort. The present case is the first one that I have seen since the advent of vaccine treatment, and the result leaves me in no doubt as to the line of treatment which should henceforth be adopted in these serious illnesses. Great credit is due to Mr. Walters for so early recognising the gravity of a distinctly rare condition, and there is no doubt that without this early recognition the girl's life could not have been saved.

Remarks by Dr. SOLLY.—I think there can be little doubt, taking into consideration the bad prognosis in these cases when treated by ordinary methods and the very serious condition of this patient when vaccine treatment was begun, that this treatment turned the scale in her favour, although, unfortunately, owing to the fact that I was summoned to the patient's home at Chudleigh in a great hurry and had only time to collect material for the inoculation, no opsonic index was taken at the beginning of this treatment. All the symptoms, including high temperature, quick pulse, drowsiness, and delirium, pointed to the condition being one of extreme toxæmia and a marked negative phase. There was some improvement after the injection of 50,000,000 of mixed stock vaccine, but this was more marked after the patient had received two doses of 25,000,000 of a vaccine made from her own staphylococcus. The opsonic index, when first taken 24 hours after inoculation, was raised to 1·35, and finally, when the patient was nearly well, it reached 2·2, and the accompanying chart shows well what has been so often demonstrated—namely, that the index rises with lowered temperature, improved clinical condition, and satisfactory immunisation of the patient.

A very important point in the treatment was the administration of citric acid. At the time when this was begun there were brawny patches in the cheek and submaxillary region and the blood drawn into the Wright's blood capsule clotted almost at once. The benefit of this treatment was very soon observed, the temperature falling more rapidly, and the swelling subsiding without suppuration in the case of the left cheek, submaxillary region and parotid gland, though there can be no doubt that these parts were infected with staphylococci. Obviously the citric acid so lowered the coagulability of the blood that lymph containing large amounts of antibacterial and antitryptic bodies was freely admitted to the infected parts and the organisms were thereby destroyed before formation of pus or destruction of tissue could take place.



A, One drachm citric acid every four hours for four doses. B, One drachm citric acid, two doses. C, Half drachm citric acid every four hours. D, Left parotitis began. E, Inoculation of autogenous vaccine, 50 million bacteria. The upper line denotes the opsonic index, the lower the temperature.

We are indebted to Sir A. E. Wright for our knowledge of the means by which we may influence the coagulability of the blood by either citric acid or lactate of calcium, and he himself has reported a case of Ludwig's angina of the face where on incision no bleeding or exudation took place, and the blood withdrawn from a vein at the bend of the elbow clotted almost immediately. The opsonic index was high, and on culture staphylococci were obtained. Administration of one-drachm doses of citric acid every three hours for six doses caused rapid improvement, and finally complete recovery. I have also observed the benefit of this treatment in a case of severe carbuncle at the back of the neck and of a whitlow due to staphylococcus aureus. After the second injection of 25,000,000 of autogenous vaccine on March 6th, no injection was given for ten days as the opsonic index was raised and the condition was satisfactory. Then parotitis on the left side began and the temperature became somewhat higher in range, and it was thought advisable to give another injection. This produced slight toxic symptoms, but the temperature was lower on the next day. Citric acid was again recommenced, and after this there was never any occasion for further inoculation as the patient made an uninterrupted recovery and without any ill effects locally. Fomentations were applied as already mentioned and pus was washed away from the inner surface of the lip, but no treatment was employed other than that described and no incisions were made.

A CASE OF RETINAL DETACHMENT IN PREGNANCY ASSOCIATED WITH NEPHRITIS.

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AND
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DETACHMENT of the retina as a consequence of albuminuria in pregnancy is rare. A case resulting in complete recovery was published in THE LANCET of May 18th, 1901, by Mr. R. G. Hann and Mr. R. Lawford Knaggs, who give references to a case of detachment occurring during severe eclamptic attacks in the eighth month of pregnancy and to one of gradual onset occurring in association with general dropsy about the time of delivery recorded by Dr. Reginald Southey in a clinical lecture on Pregnancy Nephritis.

In 1902 Heilbron[1] was able to collect 21 more or less fully recorded cases, and he found that detachment usually affects both retinæ, [illegible] nied by notable diminution c [illegible] sion. In every case the deta [illegible] after delivery, but in only a small number of cases (three in 21) was the recovery of vision complete in both eyes. In one patient complete blindness persisted. The permanent diminution in vision was due not to the detachment itself but to complication by albuminuric retinitis. The retinal detachment especially affects the lower half of the eyeball and is due to exudation between the retina and choroid.

In the following case the blindness did not come on suddenly but had been gradually increasing for about a fortnight. Induction of premature labour was followed by steady improvement in vision and disappearance of general œdema, and by more gradual improvement in the renal condition.

The patient, aged 25 years, presented herself on Sept. 24th, 1907, at the out-patient department of Mr. Henry Eales, honorary surgeon to the Birmingham and Midland Eye Hospital, to whom we are indebted for permission to publish most of the observations on the condition of the eyes. The patient, who was in the eighth month of her pregnancy, complained of blurred vision and swelling of the eyelids, which had been noticed for 14 days, and had begun a little earlier on the right side. Morning vomiting had continued during the whole of the pregnancy, the ankles had been swollen for six weeks, and the urine was said to have been diminished in quantity for the last three months. There was no history of scarlet fever or of kidney trouble, no sign of syphilis, and the woman had always been strong and healthy. There was œdema of the eyelids and of the conjunctivæ. Vision in both eyes was 6/60, and could not be improved by glasses; there was some hypermetropic astigmatism. On either side the field of vision was diminished, especially above the horizontal meridian, and there was a large retinal detachment occupying the lower part of the vitreous chamber. The ophthalmoscope showed no signs of retinitis or hæmorrhages, and the optic discs were normal. The accompanying charts show the extent of detachment when the patient was first seen.

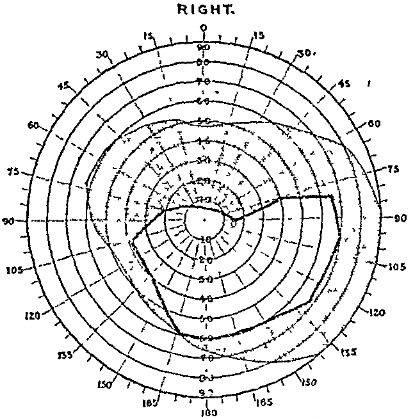

Chart showing extent of detachment.

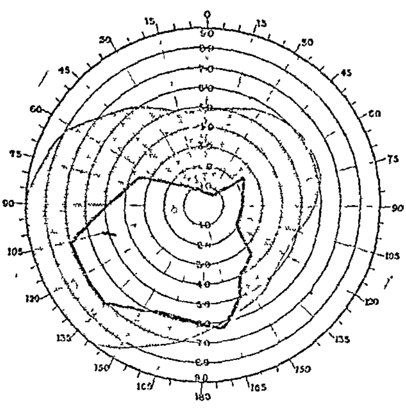

Chart showing extent of detachment.

The urine was nearly solid with albumin. The gravity of the case was at once recognised; the detached retina was regarded as part of the general œdema, and the only hope of saving the woman's sight appeared to lie in immediate treatment. The patient was therefore transferred at once to the General Hospital, where she was admitted under the care of one of us (T. W.). The account of the case that follows is taken from the notes of Dr. Charlotte Bailey.

On admission there was œdema of the face, legs, and abdominal wall. The urine was acid, of specific gravity 1030, becoming practically solid on testing for albumin. Under the microscope were seen some red blood corpuscles, together with hyaline and granular casts. 22 ounces, containing a urea percentage of 1·7, were passed in the 24 hours.

Induction of labour.—On the evening of Sept. 24th a celluloid bougie was passed into the uterus. On the next morning the os would admit the tip of the little finger, and another bougie was inserted at 10 o'clock; in the evening pains were occurring every ten minutes and the bougies were taken out. On the morning of the 26th the cervix was about three inches in diameter. The membranes were ruptured at 10 o'clock and a living child, weighing 3 pounds 2 ounces, was born two and a half hours later. The placenta was delivered a quarter of an hour afterwards and showed marked œdema of the cord. The child only lived one week.

In the 24 hours from Sept. 25th to 26th 22 ounces of urine containing 168 grains of urea were passed, dark-brown in colour, becoming practically solid on testing for albumin, showing hyaline casts but no blood corpuscles. On the following day the uterus was well contracted, the abdomen was still enlarged and bulged in the flanks, there was dulness in each flank and above the pubes, and well-marked ascites. There was great œdema of both legs and of the abdominal wall and of both conjunctivæ; the lungs were free. The patient complained of a little difficulty and oppression in breathing and of some headache. For the next three days there was a good deal of headache but the patient was otherwise comfortable and had good nights. She was treated by hot packs and by the administration of compound jalap powder each morning. On Sept. 30th, and again on Oct. 2nd, a leech was applied to each temple.

On Oct. 1st it was noted that the sight was gradually improving and that the patient could see much better. The general œdema was much less marked but there was still some ascites. On the 7th a varying degree of headache had persisted but there was no demonstrable ascites; the uterus had subsided into the pelvis. The conjunctival œdema had disappeared with the exception of a small patch on the outer corner of the left eye, while vision had gradually improved, so that large letters could be seen. On the 8th Mr. D. C. Lloyd Owen kindly reported that the curtain of retinæ had fallen back with but slight loss of function; there were some hæmorrhages along the course of the vessels and still small heapings up of the retinæ On the 13th it was reported that the patient had had mild delusions during the night and often began broken sentences. On the 14th she had a curious expression in the eyes and a sardonic smile; she was drowsy but easily roused, and had had some delusions during the night, thinking that her husband was sitting by her. There were rises of temperature to 100° F. on four days of the first ten of the puerperium and to 102° on the third day. From the eleventh to the fifteenth day the temperature was constantly raised from 100° to 102° and once to 103°. By the twenty-first day the temperature had settled down and remained thereafter normal. In the 24 hours after delivery 110 ounces of urine were passed.

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[1] Berliner Klinische Wochenschrift, 1902, Nos. 4 and 5, pp. 69 and 103.

Table showing the Characters of the Urine.

Date.	Quantity.	Sp. gr.	Albumin.	Blood.	Deposit.	Urea.
Sept 25th.	ozs. 22	1030	Solid.	Present.	Hyaline and granular casts; blood.	1·7%
„ 26th.	22	1030	„	„	Hyaline casts; no blood.	2·4 % = 68 grs
„ 27th.	110	—	—	—	—	—
„ 28th.	102	1010	Dense cloud.	Present.	No casts; débris.	0·8%
„ 29th.	80	—	—	—	—	—
„ 30th.	76	1012	Dense cloud.	—	—	0·8%
Oct. 1st.	63	1030	„	None.	—	0·9%
„ 2nd.	68	1015	„	„	—	0·9%
„ 3rd.	66	1015	„	„	Débris.	0·8%
„ 4th.	80	—	—	„	—	—
„ 5th.	90	—	—	—	—	—
„ 6th.	70	—	—	—	—	—
„ 7th.	50	1015	Dense cloud.	Not catheter.	R.B.C.; granular casts.	0·9 % – 1·96 grs.
„ 8th.	46	—	—	—	—	—
„ 9th.	50	—	—	—	—	—
„ 10th.	70	—	—	—	—	—
„ 11th.	51	—	—	—	—	—
„ 12th.	53	1016	Dense cloud.	Present. Catheter spec.	R.B.C.; granular casts.	0·9%
„ 24th.	32	—	Cloud.	—	W.B.C.	1·1%

R. B. C. = Red blood corpuscles. W. B. C. = White blood corpuscles.

The patient was transferred on Oct. 25th to the Birmingham and Midland Eye Hospital for further observation. She was then free from headache and œdema, and the sight was steadily improving. There had been considerable apparent loss of flesh since delivery. The fields of vision were much larger, especially the right one, which was nearly full. Sight had also improved. R.V. = 6/24 (1) with + 1·50 cyl. axis vert. L.V. = 6/36 (1) with + 1·50 cyl. axis vert. The retinal detachment had entirely disappeared in each eye and the fundi presented the following appearance:—

Right eye.—The optic disc was a little pale and not quite distinct, the upper and lower edges blurred, and the vessels running over the edge as if there was a little swelling. The arteries were about normal, but the veins were somewhat engorged and compressed by the arteries where they crossed. The whole eye ground was dotted over with pigment spots of varying size. There were thinning of the choroid and some whitish changes in the retina; a few white patches obscured the arteries in places, as also did some of the spots of pigment. All the changes were more pronounced at the periphery.

Left eye.—Similar except that the disc seemed a little paler. Afterwards sight gradually improved. R.V. = 6/18 part with + 1·0 cylinder axis vert. = improved. L.V. = 6/18 part with + 1·0 cylinder axis vert. = 6/12 most. Reads J. 1 at eight inches. Both fields of vision are quite full. *The fundi have hardly undergone any change*; there are no white patches over the vessels and no definite pallor of the discs. The patient gets occasional œdema of the lids but none of the legs.

The patient was seen in the out-patient room at the General Hospital on April 1st, 1908, looking well. There was no increased frequency of micturition, the urine was acid, and showed a haze of albumin, and on microscopical examination no blood cells or casts could be detected. At the end of January, 1909, she was again seen in fairly good health, but complained of occasional bad headaches. The catamenia had been regular. The urine, acid, 1014, contained no casts, but still showed a distinct haze of albumin.

A CASE OF ACUTE LUPUS ERYTHEMATOSUS.

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A FEMALE patient, aged 15 years, was admitted into St. Bartholomew's Hospital on March 12th, 1907, complaining of blueness and numbness of both hands and feet. She had been quite well up to December, 1906, when she first noticed her hands gradually becoming blue and numb. A few weeks later the feet likewise became affected. For some years previously the patient had suffered from chilblains. Past history and family history *nil ad rem.*

On admission the fingers and toes were bluish, showed old scars, and were cold to the touch. There were some blotchy red patches on the face. The nose and ears were normal. The urine was normal. The temperature was 97·4° F. and the pulse was 108. The patient complained of abdominal pain after food. Further examination revealed nothing. A few days after admission a red rash appeared all over the face and on both wrists, extending up the forearms, being accompanied by a persistently raised temperature. The urine was tested for hæmoglobinuria, but none was found. March 26th: The face had become very much worse, the nose appeared cyanosed, and albumin was present in the urine. April 3rd: The nose had become very sore and swollen, also the upper lip, so that the patient had to breathe entirely through the mouth; she also complained of headaches. 12th: The face, the hands, and the feet were better, but patches of erythema appeared on the arms and a papular eruption on the back, many of the papules being conglomerated together to about the size of a sixpenny-piece, and having a desquamating surface. The lungs were carefully examined and they showed nothing abnormal. There was a gallop rhythm at the heart's apex. The central nervous system was examined and the deep reflexes were found to be markedly increased. There was marked pseudoclonus and a questionable true clonus of the left ankle. The plantar reflexes on both sides were also questionably of the extensor type. Dr. H. Lewis Jones tested the electrical reactions of the arms and legs, reporting: "No changes except those of simple decrease of irritability, which is almost universal." 23rd: I saw the patient for the first time. The face was diffusely pigmented and erythematous; it was covered all over with scales, some of which came off easily, others being adherent; the latter on removal had those processes of horny tissue which fitted into small depressions on the skin, and which are typical of *lupus erythematosus. Minute areas* of scarring were found here and there. On having the hair cut short two bald patches were seen, covered with closely adherent scales, which when removed also showed the typical plugs and scarring. The hair was very thin elsewhere and the scalp was covered by minute scales, and was, like the face, diffusely pigmented and erythematous. A small papulo-squamous eruption covered the neck and chest. The fingers and toes were neither cyanotic nor swollen, but were distinctly painful when touched. The skin was tense and shiny, and scattered about were depressed scars varying in size from that of a pin's head to that of a split pea; they were white in appearance, had no erythema around, and most often did not occur in connexion with the follicles. This atrophic condition had spread up the back of the hands to about the middle, where the scarring was less marked, and when present was covered with scales and surrounded by a zone of erythema. Going over the wrists right up the forearms was a papulo-squamous eruption. As elsewhere, many of the scales on removal possessed the horny processes. 30th: The patient had signs of bronchitis and a bilateral facial herpes appeared. All this vanished in a few days and the temperature dropped to normal. May 18th: The fever reappeared and both hands became markedly cyanotic. Both the nose and the upper lip were again swollen and pus came out of the left nostril. 21st: The patient had some rigors, the temperature went up to 105°, and an impetiginous eruption had more or less affected the whole face. 25th: The *face began to clear up*, but there were several enlarged and painful glands in the neck. June 1st: A crop of minute vesicles (sudamina) appeared all over the chest and abdomen, accompanied by a rise of temperature and bilateral swelling of the neck in the region of the parotid glands. 5th: An abscess which made its appearance over the lower sacral region was opened and the pus was carefully examined [illegible] ically and by culture with [illegible] me onward until her discharg [illegible] of the general condition co [illegible] temperature would remain normal and the papulo-squamous rash would appear to fade, then suddenly the fever would recur and the rash would spread.

On Sept. 17th the patient was brought up to the hospital and on examination she gave all the signs of general peritonitis. She was operated on by Mr. L. B. Rawling, but a few days later she developed a purulent pericarditis, necessitating a second operation, which was followed on the same evening by death.

The pus from both the peritoneum and the pericardium showed and grew the pneumococcus. Unfortunately, no mention is made of the skin condition while in the surgical ward and no post-mortem examination was allowed.

During the patient's first stay in the hospital a blood examination was made. The culture was negative. Hæmoglobin, 50 per cent. (Haldane), index = 0·75; red corpuscles, 3,300,000; and white corpuscles, 7800. Differential count: polynuclears, 73·5 per cent.; lymphocytes, 23·5 per cent.; large hyaline, 2 per cent.; and eosinophiles, 1 per cent. No abnormal red cells were seen. Their shape was fairly constant and the staining was uniform.

I examined microscopically several pieces of skin which in every respect were typical of lupus erythematosus.

Remarks.—Cases of acute lupus erythematosus are rare, and the cases which end fatally are either associated with tuberculosis or with pneumonia. No history of tuberculosis was obtainable and since no post-mortem examination was made it cannot be excluded. Not a few cases have been described in association with lupus pernio or a papulonecrotic tuberculide of the hands and feet. Clinically lupus pernio came under consideration, but the absence of local swellings and glandular enlargements rather put it out of court, but it was finally negatived by the microscopical examination. There was complete absence of a granuloma with the epithelioid and giant cells which are invariably found in true cases of lupus pernio.

A point of great interest in this case is the age of the patient. It was not so many years ago that lupus erythematosus in childhood was said not to exist, but Galewsky[1] on searching the literature found 24 cases occurring between the ages of 10 and 16 years. Curiously enough, all these cases showed a strong similarity; in that the skin lesions were not so pronounced as in adults, being invariably of the erythema centrifugum type and affecting chiefly the face and the scalp and then the hands and the feet. Atrophy and scarring were but little marked. The disease also showed a strong proclivity towards females.

Whether c [illegible] puberty pla [illegible] impossible t [illegible] in females is due to a disposition to congestion of the face and blushing, as suggested by Hutchinson, must also at present remain a moot point.

Since all the fatal cases have followed either tuberculosis or pneumonia, one cannot help thinking that the disease is due to a toxin; the dominating erythema in such cases would certainly support a toxic view.

I am indebted to Dr. J. H. Drysdale for kindly allowing me to examine and publish the case.

St. Bartholomew's Hospital.

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[1] Archiv für Dermatologie und Syphilologie, Band lxxxiv.

DONATIONS AND BEQUESTS.—The late Mr. C. G. Swan has bequeathed £500 to endow a cot at the Bristol Royal Hospital for Children and Women.—The Chelsea Hospital for Women has received from Lady Tate £1000 to endow a bed.—The Seaside Convalescent Hospital, Seaford, Sussex, has received a donation of £1000 from Mr. Otto Beit.—Among the latest contributions received at the Bank of England for King Edward's Hospital Fund for London is a contribution of £1500 from the Drapers' Company, being the half-yearly payment of their annual subscription of £3000.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Spectroscope for Testing Colour Perception.—New Cataract Pedigrees.—Treatment by Radium.

A MEETING of this society was held on July 9th, Mr. Priestley Smith occupying the chair.

Dr. F. W. Edridge-Green showed a Spectroscope for Testing Colour Perception. It is constructed like an ordinary spectroscope, except that there are a telescope and collimator both fixed, and in the focus of the eyepiece there are two shutters. These cover the whole of the spectrum, and by means of them the operator can isolate any portion of the spectrum in order to show the size of the patch which seems to be monochromatic to any person. He said that whereas it used to take him three days to examine a case by the old instrument, he could now examine one in half an hour, because attached to each shutter was a drum graduated in wave lengths, graduated to the fourth degree, which was very fine. That enabled the size of the patch to be determined without any calculation. The spectroscope could be used for seeing the exact termination of the spectrum and how far the ends extend.

Mr. N. Bishop Harman showed a chart illustrating some New Cataract Pedigrees. The cases illustrated the truth of Mr. Treacher Collins's contention that the cataract was a defect in the lens secretion which went to make the capsule. The patients had plaques on the back part, behind the nucleus, and including the posterior part of the lens. In one girl the cataract extended so as to include the nucleus, while in a further case it projected forward like a piece of coral through the lens, so that it seemed there was lens matter bulging through. At first he thought it was that, and that it had been needled and afterwards got hard and sclerosed.

Mr. Arnold Lawson and Dr. Mackenzie Davidson communicated a paper entitled "A Preliminary Note on the Treatment of Eye Diseases by Radium." They said the cases had been selected from the out-patient clinique of Moorfields Hospital and were chosen as instances of maladies which usually proved obstinate or only improved slowly under the ordinary forms of treatment, or else were of active virulent nature and so required drastic measures. Only 17 cases had so far been tried, but in every case the result of exposure to radium had been very encouraging. Most of the cases were corneal ulcerations, four were non-ulcerative lesions, and one was episcleritis. After one application of five minutes to the hypopyon there was distinct benefit. For instance, a man, aged 35 years, gave a history of injury to the right eye. There were a deep ulcer and a grey infiltrated area of 4 millimetres diameter, and there was a large hypopyon. 29 milligrammes of radium were applied for five minutes, and five days later the injection was subsiding and the hypopyon had disappeared. Two days after a second application of three minutes the man was discharged from the hospital, the eye being not quite white, but, for all practical purposes, well. Other cases also did very well under the treatment. In all cases the only other measures adopted were the use of boric lotion and atropine where required. Some punctate erosions were also similarly treated, and gave equally encouraging results, as also did cases of old-standing trachomatous pannus, except in one case, in which there was increased vascularity after the treatment. The dosage of radium was an important point, and the small dose of 5 milligrammes seem [illegible] did a much larger dose. In one case [illegible] days, but in the ot [illegible] Mackenzie Davidson explained that the paper was a tentative one. The radium was applied in sealed glass tubes, the glass cutting off the alpha rays, so that the beta and gamma rays only passed through to the lesion.—Mr. Ernest Clarke and Mr. F. Hewkley discussed the paper.

Mr. Priestley Smith then, in a graceful tribute, presented to Mr. Edward Nettleship the Nettleship medal for his work [illegible] paying a high [illegible] ed him to [illegible] ng.

Reviews and Notices of Books.

The Commercial Products of India. Being an Abridgment of "The Dictionary of the Economic Products of India." By Sir George Watt, C.I.E., M.B., C.M. Glasg., LL.D., formerly Professor of Botany, Calcutta University, and Reporter on Economic Products to the Government of India. London: John Murray. 1908. Pp. 1189. Price 16*s.* net.

The "Dictionary of the Economic Products of India," written by the same author and published in 1885-94, having been out of print for some time, the Government of India directed that a corrected and abridged edition should be brought out. As this work was to be limited to a single volume, it was decided that it should be confined to products of present or prospective commercial and industrial importance. A representative committee was appointed to draw up a scheme; this committee comprised Sir W. T. Thiselton-Dyer, K.C.M.G., C.I.E., F.R.S., Director of the Royal Botanic Gardens, Kew, as chairman; Mr. J. S. Gamble, C.I.E., F.R.S., Professor W. R. Dunstan, F.R.S., LL.D., Director of the Imperial Institute; Sir Thomas Holderness, K.C.S.I.; and Lieutenant-Colonel D. Prain, C.I.E., F.R.S., as members. The writing of the present volume extended from 1904 to 1907.

The work as now published forms a most elaborate and accurate record of all the material previously published on the subject, as well as official matter amassed in Government offices in India. It may be regarded as a useful digest within assigned limits of all available information concerning India, and should prove a work of reference of great practical value to those interested in the commerce and industry of that country. Compiled in the form of a dictionary, the various products of the country are easily ascertained. Turning to the portions of medical interest rather than those affecting other industries, we find that the indigenous drugs of India are legion, a fair proportion being recognised in the British Pharmacopœia, while those used by the native practitioners of the East embrace still further varieties. All the recognised and more important drugs are fully and scientifically described, and their production, the amount produced, their export and commercial value are stated in each case. In the past the European population of India had to rely almost entirely for its medicines on the drug-producing centres of the world; if through any unforeseen cause India had been cut off from the rest of the world—for instance, by war—the stock of European drugs in the country would have lasted but a short time, as owing to climate it is not only inadvisable but impossible to store large supplies, as deterioration occurs. Within the last decade, however, the Government of India has formed some half-dozen factories, and several enterprising civilian manufacturing druggists have followed suit, the result being that the country is now nearly self-supporting, and compressed drugs in tablet form are turned out with a skill that will compare very favourably with that of European firms. The production and manufacture of quinine give a good example of this, for the annual imports of this drug on behalf of the Government have been discontinued, India being now able to turn out a liberal supply of an invaluable drug at a remarkably low price. The working of the drug factories has given lucrative employment to a great number of persons, and a net annual profit has resulted to India of some £10,000—a truly creditable record. Packets of quinine, each containing seven grains, are now sold at the village post offices for a farthing a packet, and as this procedure has had the immediate effect of increasing the demand the future must of necessity witness a considerable expansion both of production and manufacture. Along with this the exports of cinchona bark from the country to the United Kingdom form a source of profit; in 1906-07 the exports reached 494,587 pounds. The expansion in the export traffic of castor oil is another episode of medical interest; the export for the shipping season of 1902-03 reached over 2,000,000 gallons, representing approximately £200,000 sterling.

The production and export trade in wheat and flour are of importance to record, though here we are without the province of medicine and dealing with a subject of pre-eminent national consequence. In 1904-05 the total export of wheat was over 43,000,000 hundredweights, nearly 29,000,000 hundredweights of which were consigned to Great Britain, or nearly a third of the amount imported from all other countries of supply to the United Kingdom. The wheat-producing power of India is entirely due to the increased canal and well irrigation accomplished by the Indian Government during recent years, and these undertakings will no doubt be greatly extended in the future.

The book is well printed, well bound, and has an exhaustive index; it should form an important addition to the library not only of all interested in the economic products of India but of all political students and workers.

Rational Immunisation in the Treatment of Pulmonary Tuberculosis and Other Diseases. Comprising a Paper read before the Royal Society of Medicine, March, 1909, by E. C. Hort, B.A., B.Sc. Paris, M.R.C.P. Edin. London: J. Bale, Sons, and Danielsson, Limited. 1909. Pp. 75. Price 3*s.* 6*d.* net.

The thesis maintained by the author in this book is that in infective disease injury is done to the cells of the body, not only or even principally by the actual toxins of the invading organisms, but by secondary products arising from breaking-down cells. He therefore holds that inoculation with bacterial vaccines is not to be relied on as a mode of treatment, but that methods must be adopted which lead to auto-inoculation—that is, to diffusion throughout the body of the products of bacterial action on its own cells. Other points raised are the untrustworthiness of the opsonic index as a measure of response to vaccines, and the advantage of a special method of recording and interpreting charts of temperature in disease. We have not space to discuss more than a few of the points which strike us, and in doing so we must premise that either from our own mental obtuseness or from some lack of lucidity of thought or expression in the writer we have found it difficult to follow the argument in many places. With regard to the general principle, it would seem that if the bacterial toxin gives rise to the secondary toxic products of cellular metabolism, then the inoculation of a bacterial vaccine will cause the appearance of these latter, and they will produce the resulting form of immunity as efficiently as if they arose from some focus of disease existing in the body. The only advantage of what is called auto-inoculation would appear to be the assurance that the toxins of the very organism which causes the disease are being employed for a stimulus, and this can be equally well done by making an ordinary vaccine from organisms isolated from the individual patient. With regard to the evidence that these secondary poisons are more important than the primary one, the only fact that we can recollect which tends to prove this hypothesis is the discovery by Sidney Martin of poisonous albumoses in diphtheria: hence at present the whole suggestion must be regarded as speculative. It is no doubt true that cells undergo autolysis by means of enzymes contained within themselves, and that these enzymes are enabled to act by reason of some toxic influence exerted from without on the cells which otherwise resist their action. The main object in treatment would then seem to be the counteraction of the original poison—i.e., the bacterial toxin.

We are quoting only one or two instances of that loose thinking or careless writing which occurs throughout the book. On p. 7 the author states that a cell damaged by toxins "can of its own accord only return to a normal state by inciting responsive reaction in the fertilising lymph that supplies it." Leaving aside the words "of its own accord," which we might be disposed to quarrel with as indicating that there is some other means besides its own vital energy by which a cell can recover its health, we do not understand what reaction a cell can excite in the lymph, a mere solution of chemical substances and not a living body itself. Again, take the following sentence: "The sign of restoration [of cellular integrity] is the exhibition of appropriate restraining bodies." Surely a sign is something which we actually observe, and it would be more accurate to say that the recovery of the normal appearance of the cell was a sign of the formation of the (in this case) purely hypothetical anti-enzymes. Further, on p. 22, we are told that "spontaneous inhibition of auto-inoculation is effected by all the methods which the economy employs in order to arrest the disease." If this be so, it would seem that in artificially inducing this auto-inoculation—the object of the author's teaching—we are exactly running counter to those very means of natural cure which it is the aim of every wise physician to encourage.

On the whole, while we must admit that Mr. Hort's suggestions are interesting and well worthy of study, we cannot feel that he has yet established his position, and we are led at times to doubt whether the views he has formed are in themselves really clearer than the obscure language in which they are formulated.

International Clinics. Edited by W. T. LONGCOPE, M.D. Philadelphia. Vol. IV., Eighteenth Series, 1908, and Vol. I., Nineteenth Series, 1909. London and Philadelphia: J. B. Lippincott Company. *Vol. IV., pp. 310;* Vol. I., pp. 309. Price £1 15*s.* net per set of four volumes.

AMONGST the many interesting articles in the fourth volume of the eighteenth series of this publication is one by Dr. A. G. Nicholls (Montreal) on Acute Dilatation of the Stomach. In discussing the morbid anatomy of this condition he mentions that, out of 120 necropsies, in 35 instances the whole or a part of the duodenum was also dilated. This fact, he says, has an important bearing on the pathogenesis. In a large proportion of cases obstruction is found at some part of the duodenum, more rarely at the pylorus. The most important single condition appears to be the constrictive force exerted by the root of the mesentery where it crosses the third portion of the duodenum. It is often difficult to determine which is the primary condition—the dilatation of the stomach or the obstruction. That obstruction may be the determining cause in some instances is certain. On the other hand, it is evident that dilatation of the stomach, whether acute or chronic, is competent to produce mesenteric obstruction or to aggravate it if it be already present. One thing, however, is certain, that a vicious circle is produced. Dilatation of the stomach favours the production of mesenteric obstruction, and mesenteric obstruction leads to dilatation of the stomach. Dr. Nicholls considers that the exact sequence of events cannot be definitely settled until more cases are reported with full and careful study of the clinical features.

Amongst other articles contributed to this volume are: The Advance of Physical Therapeutics, by Dr. J. N. Pratt (Boston); Traumatic Lesions of the Semilunar Cartilages of the Knee-joint, by Mr. A. N. McGregor (Glasgow); the Rôle of Insects in the Transmission of Disease, by Dr. M. A. Brown (Cincinnati); and the Neurasthenic Syndrome, by Dr. D. J. McCarthy.

Another noteworthy contribution to this volume is one on Mikulicz's Disease and Allied Conditions, by Dr. Campbell P. Howard (Montreal). In the literature of the latter part of the nineteenth century isolated enlargement of the lacrymal or salivary glands had been noted. Mikulicz in 1888 first described the condition which now bears his name, but since then several observers have drawn attention to the disease. Oheinisse and others claimed that the points emphasised by Mikulicz served to distinguish the condition from pseudoleukæmia and leukæmia, in either of which the same chronic painless enlargement of the lacrymal and salivary glands may occur. They claim, therefore, that the disease is a clinical entity and not a syndrome. This, however, is not the view adopted by Dr. Howard. He gives abstracts of 55 cases of "Mikulicz's disease proper," and then discusses the conditions of pseudo-leukæmia and leukæmia, and finally arrives at the following conclusions:—1. Mikulicz's disease is not a simple disease entity, but a clinical syndrome which varies very greatly in its form, etiology, and course. 2. Under this term must be accepted isolated as well as symmetrical disease of the lacrymal and salivary glands due to simple lymphomata, pseudo-leukæmia, leukæmia, tuberculosis, and syphilis. 3. A whole series of cases exists forming links in the chain from isolated lymphomata of the lacrymal or salivary glands to complete involvement of these glands with simultaneous disease of the lymphatic and hæmatopoietic apparatus.

Amongst other articles in this volume are the following: The Hospital for Advanced Cases of Tuberculosis, by Dr. L. F. Flick (Philadelphia); Occupations and so-called Rheumatic Pains, by Dr. J. J. Walsh (New York); Suppuration in Appendicitis, by Mr. E. M. Corner (London); and Absorption from the Peritoneal Cavity, by Dr. W. G. MacCallum (Baltimore).

Sanitary Law and Practice: a Handbook of Public Health. By W. ROBERTSON, M.D. Glasg., D.P.H., and CHARLES PORTER, M.D., B.Sc. Edin., M.R.C.P. Edin. Second Edition. London: The Sanitary Publishing Co., Limited. 1909. Pp. 694. Price 10*s.* 6*d.* net.

THE first edition of this work having been exhausted, the authors have availed themselves of the opportunity of bringing the book up to date; they have recast a number of sections and have added new ones—for example, those on school medical inspection and on vital statistics. The handbook in its present form more than ever impresses us as a most useful and conscientious piece of work, and this later issue should prove even more useful than its predecessor has done. So far as setting forth methods of administration to be adopted, and so far as giving a synopsis of the law relating to public health questions are concerned, nothing is left to be desired. It must be confessed, however, that the chaotic condition of existing public health legislation is forcibly brought home to the mind of the reader of this work, and it is perhaps open to question whether it is desirable that the student should concern himself with so detailed a study of differences in the public health enactments of England and Wales, London, Scotland, and Ireland, as appears by implication to be thought necessary by the authors of this handbook. The Scotchman who went to London found the inhabitants of that city speaking English, though as he remarked it was with a "southron accent"; and the differences between Scotch and English public health law are after all matters of small moment in comparison with many questions which are of far greater importance to the student. The authors of the handbook, however, explain that it is their desire "to meet the wants of those who are undergoing a course of systematic training preparatory to presenting themselves for examination." Do examination papers justify, it may be asked, so strict an adherence to the "practical," and such rigid insistence upon legal minutiæ? If they do, it is, at any rate, well to recognise the fact that it is possible for a student completely to master a *practical* handbook, such as this, and yet to know little of some of the problems which are likely to face him and to compel his attention when he comes to be a medical officer of health. For example, the question whether cow maladies (other than tuberculosis, to which disease a full share of attention is devoted) are concerned in producing infective qualities of milk; the question of the relation of polluted shell-fish to enteric fever; or, yet again, the question of spread of small-pox from hospitals. On such a subject as that last named we should have welcomed a reference to the work of Sir William Power, in order that the student might, at any rate, be afforded a chance of discovering for himself how to think, in some lucid interval when he was not required to devote all his energies to endeavouring to commit to memory what to think.

The ever more and more tangled growth of legislation is held to compel the devotion of more and more time by students to legal technicalities, but such time will be grudgingly given by those who have realised that public health literature is also deserving of study. It might be argued with some show of justice that the student who had mastered one of the classics of that literature at first hand was better equipped for the work of a medical officer of health than he who has all the Acts and By-laws at his fingers' ends. It would, of course, be impossible to boil down and present in concentrated form the works of the masters in a handbook such as this, but there is perhaps a danger that in the press and hurry of preparing for examinations the student may fail to appreciate the fact that even in public health "there be of them that have left a name behind them." If no hint is given to guide him, the embryo health officer is only too likely to form the opinion that the only names worth remembering in connexion with public health are those of inventors of particularly ingenious appliances.

But to return to sanitary law and practice, there are some excellent words of advice, evidently written as the outcome of severely practical experience, given to health officials in this handbook. There is no doubt about the soundness of the dictum that the medical officer of health would do well to exercise tact "in various ways on different occasions"—it may be safely prophesied he will, in the course of his career, find scope for such exercise. Particularly, however, the advice given to the sanitary inspector may be commended. "He should endeavour to make himself known in his district, but it should be because he is civil and kindly, not because he is overbearing and dictatorial."

High-frequency Currents. By FREDERICK FINCH STRONG, M.D., Instructor in Electro-therapeutics at Tufts College Medical School, Boston. London: Rebman, Limited. 1908. Pp. 289. 12*s.* 6*d.* net.

WHILE books on this subject have appeared from time to time, sometimes as separate volumes but often as a section or chapter of a volume devoted to medical electricity generally, it must be admitted that as a whole the literature relating to high-frequency currents has suffered from vagueness. It has not been altogether satisfactory. A perusal of this work leaves us with the impression that, while vagueness still exists, some progress has been made in the direction of a better understanding of the subject. In the first five chapters the historical and physical aspects of the matter are treated in a sufficiently complete manner, the author relating how all the phenomena and effects can be explained by the modern electron theory. Where the problem is a difficult one for the non-technical mind to grasp, free use is made of diagrams as well as the *water analogy* to make it more easy to understand. The next five chapters are devoted to a description of the various forms of apparatus in use. The different types are compared, and the author shows the advantages of each, and how it comes that no one apparatus of the ordinary kind can fulfill all requirements. There appear to be wide differences in frequency and volume of current obtained from different forms of instruments—those having a high rate of frequency are best suited for acting upon superficial and circumscribed areas, and the lower the frequency the better is it adapted for more deeply seated structures. The coils and transformers designed by the author seem to have some very good points, and he claims to have been the originator and inventor of large numbers of instruments and methods of using them. This is all quite right and proper, but we do not see the necessity for such constant reiteration of his having been first in the field, which is likely to prove tiresome to many readers, who, after all, are more concerned with the philosophy of the subject and such evidence as there may be of the practical results in treatment that may be expected.

A number of chapters follow which are devoted to the physical properties of these currents and the methods of applying them in treatment. Physiological and therapeutic action are treated in Chapters XXI. and XXII., but it is somewhat disappointing to find how little the author has to tell us as to the "why and wherefore" of things. Actual therapeutics are given in the last three chapters, and we think this part should have received more lengthy discussion than it has. In short, notwithstanding that the book is a good one, and one that anyone who is interested in the subject will find well worth careful attention, it is a fact that too much attention is given up to the purely technical side and too little to the practical value and use of the currents at our disposal. It is also the case that most of the methods of applying those currents here described involve the possession of the special coil designed and used by the writer himself.

LIBRARY TABLE.

Atlas of the External Diseases of the Eye. By Professor Dr. O. HAAB of Zürich. Authorised translation from the German. Third edition. Edited by G. E. DE SCHWEINITZ, M.D., Professor of Ophthalmology in the University of Pennsylvania, &c. With 101 coloured illustrations. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 244. Price 13*s.* net.—*Atlas and Epitome of Ophthalmoscopy.* By Professor Dr. O. HAAB of Zürich. Second American edition from the fifth German edition. Edited by G. E. DE SCHWEINITZ, M.D., Professor of Ophthalmology in the University of Pennsylvania, &c. With 152 coloured illustrations. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 94. Price 13*s.* net.—The favour which has been accorded to these books is shown by the frequency with which they have been reprinted and re-edited. They are trustworthy guides to the branches of ophthalmology with which they deal, both as regards the texts and the illustrations. The latter are as good as could possibly be expected at the remarkably low price. Professor de Schweinitz has added a plate to the ophthalmoscopy, but otherwise the lithographs are the same as in former editions. He has also added comments to the texts, and these will be found to enhance the value of the books and give them an advantage in matter as well as in language over the German editions for English-speaking readers.

Practical Points in Anæsthesia. By F. E. NEEF, M.D. New York: Surgery Publishing Co. Pp. 46. Price 60 cents.—This is a very conveniently produced little book, the instructions in which are based upon the practice of anæsthetics in vogue at the German Hospital, New York City. The methods in use are apparently confined to the drop method with a Schimmelbusch mask, and the tube method by means of catheter indiarubber tube and funnel. The preliminary use of morphia, one-half grain of the sulphate hypodermically half an hour before administration, is almost a routine measure. Anæsthesia is always induced with "anæsthol," a mixture of chloroform, ether, and ethyl chloride, or with chloroform. The author believes that respiratory embarrassment is always the result of "crowding" the anæsthetic, an Americanism that requires some explanation for English readers. He is evidently well impressed with the desirability of preserving as light a degree of anæsthesia as is compatible with the surgeon's requirements. Indeed, he includes prostatectomy amongst the operations for which only superficial anæsthesia is required after the skin incision. The book is too slight in its scope to be of much general service.

Notes from a Collector's Catalogue: with a Bibliography of English Cookery Books. By A. W. OXFORD. London: John and Edward Bumpus. 1909. Pp. 116. Price 5*s.* net.—The A. W. Oxford of the title-page is not only a clerk in holy orders and a Doctor of Medicine of the University of Oxford, but also busies himself with municipal work and educational matters. The modest little book before us shows the recreative side of his character—he is a collector, and one sentence of his book gives the clue to the whole art and science of collecting: "One tires of collections, but never of collecting." He commences his treatise with three rules as to how to collect wisely, as to which we refer our readers to the work itself, and then proceeds to recount how he promptly broke the second. The true joy of collecting for the ordinary collector with limited wealth is for him to buy the things he wants, or thinks he wants, which are within reach of his purse. Probably after a week or so he will find he does not want one at least of his recent purchases and then he can either sell it or give it away to a museum. The modest collector may in this way obtain as much pleasure as a prince of the tribe, such as Mr. George Salting, although, of course, he cannot hope to acquire such flawless specimens of art as anyone may see in that gentleman's loan collection at South Kensington. Dr. Oxford makes an admirable suggestion which we should like to see carried out, and that is that every village should have a museum, "in which such things as smock-frocks, flails, screeves, local engravings, should be preserved. If no proper building can be erected, why should not a part of the school, or even of the church, be used? The history of a village is its sacred history." This is quite true, and local "things," especially agricultural implements, have far more bearing on history and social matters than is generally supposed. It is probable that there is still an ox goad or two left in Sussex, for plough oxen were quite common 40 years ago and some still linger. The length of the goad was 16½ feet, from which the unit, the rod, pole, or perch, was taken. 40 rods made a furlong—i.e., furrow long, or the length of land an ox team could plough without a rest. Here is an explanatory piece of social life which is worth preserving. All local customs and folklore, too, may and often do throw light upon obscure subjects and prove to be foreshadowings of modern discoveries. For years before the antiseptic virtues of formaldehyde were extolled it was the custom of Somersetshire dairy farmers to scrub out the churns with a handful of nettles "to keep them sweet," and in "A True Gentlewoman's Delight," a cookery book of 1653, directions are given for laying a cream cheese on nettles, presumably to prevent it going mouldy. Mediæval churches were always used as museums, and there is no reason why our churches, in many places the pride of the country side, should not be similarly employed in modern days. Dr. Oxford discourses pleasantly about his various collections, which range from stay busks to old silver. Among his books is a collection of "Tractatus Varii de Pulicibus" and (in two volumes) the weekly report books from 1826–1830 of the Rev. W. Valentine, who was chaplain and house governor of the London Hospital. The reverend gentleman, it appears, had a by no means easy time with the cook, who was a lady of unfettered speech, and who was, according to one of the porters, "more like a tiger than a woman." Altogether Dr. Oxford may be felicitated both upon his collections and his account of them.

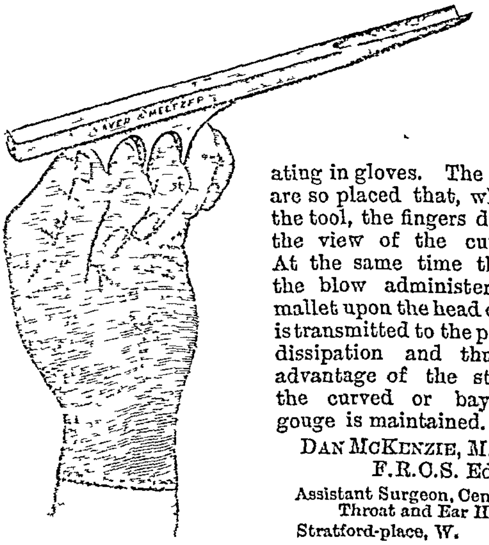
JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. II. No. 8. July, 1909. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum. Single numbers, 8*s.* 6*d.* each.—The contents of this number are: 1. Syncopal Attacks associated with Prolonged Arrest of the Whole Heart, by E. E. Laslett. The patient is a married woman, aged 40 years, who suffer from syncopal attacks associated with a slow, irregular pulse. The infrequency of the pulse is due to long intermissions lasting from two to five seconds. Tracings prove that the intermissions are due to an arrest of the whole heart and not to ordinary heart block. Tracings taken by Mackenzie's ink polygraph are given and the writer is enthusiastic as to the value of this instrument. The explanation offered of the phenomena in this case is that they are due to depression of the sinus rhythm by vagal inhibition. 2. A paper by Thomas Lewis on the Irregular Action of the Heart in Mitral Stenosis. An interesting discussion illustrated by tracings is given of some of the abnormal characters of the cardiac rhythm in mitral stenosis, and of the inception of new cardiac rhythms in heart block. 3. The Pathology of Paroxysmal Hæmoglobinuria: a Critical Review, by G. H. K. Macalister. The condition is the result of intravascular hæmolysis, which occurs when the blood serum becomes autolytic. There is in the blood a potential toxin composed of cytase and amboceptor which becomes active under certain conditions, of which the most prominent is external cold, which, however, is regarded as acting reflexly, the hæmolytic reflex travelling by the same path as the vaso-motor reflex. The relation of the condition to Raynaud's disease and to syphilis is discussed. The serum in this condition is isolytic as well as autolytic, and it is not necessary to assume any specific vulnerability of the red corpuscles. The ultimate source of the hæmolysin is not known. A useful bibliography is appended to this paper. 4. On the Frequent Failure of the Urine to Decompose in Cases of Pulmonary Tuberculosis, by W. Hale White and H. I. Janmahomed. It was found that the urine of patients suffering from pulmonary tuberculosis frequently has a high acidity, and that it may remain acid for prolonged periods. It also appears to have considerable bactericidal power. 5. Peripheral Birth Palsy, by E. F. Trevelyan. The various forms are described and illustrative cases are fully noted and figured. The prognosis and treatment are also discussed. 6. Clinical Observations on the Effects of Certain Drugs in Diabetes Mellitus, by Arthur J. Hall. The effects of codeine, opium, secretin, and aspirin upon the intake of fluid, the quantity of urine, and the daily output of sugar having been studied, the results are summarised in regard to each drug. 7. A Contribution to the Study of Congenital Family Cholæmia, by Robert Hutchison and P. N. Panton. The authors record two cases and give references to a case in the same family described by

Murchison in 1885. From a study of their own cases they conclude that one factor of considerable importance is the production of defective red cells, evidenced not only by the presence of cells of abnormal shape, size, and staining reactions, but also by increased fragility of the cells. This increased fragility is not the effect of the bile in the serum. 8. The Excretion in the Urine of Sugars other than Glucose: a Critical Review, by Archibald E. Garrod. Lactosuria, maltosuria, lævulosuria, pentosuria, and heptosuria are considered, and a useful account of each of them is given, with the tests by which they may be recognised and the conditions under which they occur.

New Inventions.

MASTOID GOUGES AND CHISELS.

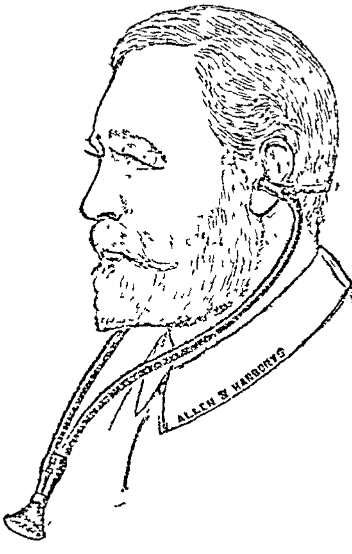


Messrs. Mayer and Meltzer of Great Portland-street, W., have made for me a set of gouges and chisels after the pattern shown in the accompanying illustration. They are particularly useful when operating in gloves. The finger-holes are so placed that, when holding the tool, the fingers do not block the view of the cutting edge. At the same time the force of the blow administered by the mallet upon the head of the gouge is transmitted to the point without dissipation and thus the great advantage of the straight over the curved or bayonet-shaped gouge is maintained.

DAN MCKENZIE, M.D. Glasg.,
F.R.C.S. Edin.,
Assistant Surgeon, Central London Throat and Ear Hospital.
Stratford-place, W.

A NEW BINAURAL STETHOSCOPE.

THE illustration shows a new form of binaural stethoscope, which we have tried and have found satisfactory. It is light and portable, since, owing to the smallness of its metal parts, it can be easily folded and carried in either the hip or coat pocket. It will be noticed from the illustration that the spring passes round the back of the head, and therefore cannot possibly interfere with the view of the auscultator while the instrument is being used. A further advantage is that there is no rotation of the ear-pieces, when the tubing and chest piece are moved during auscultation. The spring may require slight adjustment for comfort in some people, but this seems to be an easy matter. The price is 7*s.* 6*d.* complete, and the makers are Messrs. Allen and Hanburys, Limited, of Wigmore-street, W.



METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are some of the principal amounts, additional to those already announced in THE LANCET, received at the Mansion House or notified directly to us as having been collected on behalf of the Metropolitan Hospital Sunday Fund up to Monday, when the sum paid in was about £40,000:—

	£	s.	d.
St. Michael's, Chester-square	761	0	0
St. Peter's, Eaton-square	327	0	0
St. George's, Hanover-square	246	0	0
Essex Church, Kensington	243	0	0
St. Peter's, Cranley-gardens	237	0	0
St. Paul's, Portman-square	173	0	0
St. Peter's, Brockley	139	0	0
Christ Church, Mayfair	135	0	0
St. Stephen's, South Kensington	130	0	0
Wimbledon Churches	125	0	0
City Corporation	105	0	0
Holy Trinity, Paddington	103	0	0
Christ Church, Gipsy Hill	99	0	0
Brockwell Park Open-air Meeting	87	0	0
St. John's Wood Presbyterian Church	74	0	0
Holy Trinity, Marylebone	72	0	0
Hampstead Parish Church	71	0	0
Victoria Park Christian Evidence Association	67	0	0
Ferme Park Baptist Church	64	0	0
Holy Trinity, Wandsworth	62	0	0
German Church, Camberwell	55	0	0
Christ Church, Highbury	55	0	0
All Souls', Langham-place	51	0	0
St. Michael's, Highgate	48	0	0
Orange Street Congregational Church	42	0	0
[illegible]	40	0	0
[illegible]	40	0	0
[illegible]	39	0	0
[illegible]	37	0	0
Christ Church, Streatham Hill	37	0	0
St. Agnes', Kennington	34	0	0
Trinity Presbyterian Church, Hampstead	33	0	0
St. Olave's, Woodbery Down	32	0	0
Camden Church, Camberwell	31	0	0
[illegible]	31	0	0
[illegible]	30	0	0
[illegible]	30	0	0
[illegible]	30	0	0
[illegible]	30	0	0
All Saints', Notting Hill	28	0	0
Trinity Presbyterian Church, Clapham	28	0	0
Willesden Presbyterian Church	27	0	0
All Saints', Clapham Park	26	0	0
Chapel of the Charterhouse	26	0	0
St. Alfege, Greenwich, and Chapel of Ease	25	0	
St. Luke's, Bromley	25	0	0
Walthamstow Parish Church	25	0	0
St. John's, Pinner	24	0	0
St. Matthew's, Upper Clapton	24	0	0
Emmanuel, Chelsea	24	0	0
St. John with All Saints', Epping	23	0	0
St. Andrew's, Alexandra Park	23	0	0
St. John at Hackney	23	0	0
St. Katherine's Royal Hospital Collegiate Church	22	0	0
St. Mark's, Kennington	22	0	0
St. Philip's, Kensington	20	0	0
Magdalen Chapel, Streatham	20	0	0
St. Andrew Undershaft	20	0	0

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—Demonstrations in Clinical Medicine will be given at this College throughout the months of August and September, beginning on Monday, August 9th, at 2 P.M., in the clinical theatre at the hospital. The subjects will be taken in the following order:—Mondays—Diseases of the Lungs. Tuesdays—Diseases of the Blood. Wednesdays—Diseases of the Digestive System and Children's Diseases. Thursdays—Diseases of the Nervous System. Fridays—Diseases of the Heart and Vessels. All members of the profession will be admitted on presentation of their address cards, and further particulars can be obtained at the College from the Warden, Mr. Munro Scott.

THE LANCET.

LONDON: SATURDAY, JULY 17, 1909.

The Imperial Cancer Research Fund.

IN another part of this issue we publish the seventh annual report of the Imperial Cancer Research Fund, and in it we find much to afford us both satisfaction in the work that has already been done and hope for the future. The only aspect of the report which is of a saddening tendency is the financial one; support of the Fund is very poor. When the Cancer Research Fund was established in 1903 nearly £50,000 were received, and in the following year a little more than half this amount, but 1905 saw a drop to £3000; in 1907 it was £500, and in 1908 it was under £700. It is true that the Bischoffsheim donation and some legacies have been received as well, but it is depressing indeed to find that for the last two years less than £1000 a year has been contributed to what is acknowledged to be among the most important research works in the realm of medicine. We hope that in the next report it will be recorded that a great increase has occurred in the amount of subscriptions, for the capital of the fund is being diminished year by year. We place the financial position of the Imperial Cancer Research Fund in the front of our remarks, for we feel that any relaxation of the energy with which the research is being conducted will be intensely regrettable, while the whole spirit of the annual report shows that such relaxation will only come from lack of money. The great help received by the Fund from the Royal College of Physicians of London and the Royal College of Surgeons of England in the granting of free laboratory accommodation has enabled the most rigid economy to be practised, but the time is approaching when these Colleges will be unable any longer to give this assistance, and then the need for further financial aid will become even more acute. The public, we trust, will soon come to the rescue.

The work that has been done up to the present is of vast importance and full of encouragement to all who know the difficulties in the way of research; but the results are not sensational, and it may be that the steady diminution in the financial support is due to the fact that so far no "cure for cancer" has been found and no certain clear and simple cause of it has been discovered. No one familiar with the points at issue expected any such immediate outcome, but the public was more sanguine. Much has, however, been done, and probably no step has been of more value than the discovery of the inoculability of malignant growths. This was first shown to be possible by JENSEN, and now the conditions under which inoculation is possible are so well known that success in inoculating a malignant tumour from one animal to another of the same species is almost certain. At one time many investigators refused to allow the carcinomatous nature of the inoculable tumours, but now we believe this is acknowledged by most observers. The value of this discovery consists mainly in the provision of an unlimited amount of material on which the action of drugs and other methods of treatment can be tried, and in which can be observed the changes occurring in a series of cancerous growths. The choice of the mouse as the chief animal for the study of cancer has been fully justified by the results obtained, and its small size and the little cost of maintenance are also strong arguments in its favour. In the study of the tumours produced by inoculation the important discovery was made that in one case the supporting stroma of a carcinoma underwent sarcomatous transformation, as was reported in the Third Scientific Report, and now we are informed that this change has been observed in a second case. But the new case differs in many important matters of detail from the first and therefore it is very valuable in helping to elucidate the factors on which this transformation depends, while the most evident factor in determining the development of a sarcoma from the stroma of the host has been shown to be the duration of the active growth of the implanted carcinoma. Another point which has been established is the immense variety of structure and pathological power exhibited by tumours, though the tumours of any one strain may present a general constancy. Two tumours apparently identical histologically may differ widely biologically. The constancy with which the various tumours retain their individual peculiarities shows that from the epithelial cells of one and the same organ many distinct kinds of malignant new growths may arise. This is fully in accord with the observations of the surgeon and the pathologist, who have noticed the immense clinical differences between two malignant growths which were histologically almost identical. The experiments have shown that these differences, though in part due to the constitutional differences of the hosts, are also in great measure the result of individual differences in the growths themselves. The most striking work, from the point of view of the prevention or cure of cancer, has been that on the manner in which animals may be rendered immune to the inoculation of malignant growths, and, as was shown in previous reports, both cancerous and normal tissues can be employed to effect this. But recent experiments have demonstrated that cells which have been killed or disintegrated in any way, as by chemical poisons or by physical agencies, such as heat or crushing, have lost entirely their power of conferring resistance. This is in marked contrast to what is seen in the case of diseases due to infective micro-organisms. In this connexion the action of radium upon normal and cancerous cells is of special interest, for if either be exposed to radium for an interval insufficient to cause any structural alteration in the tissues which is recognisable either by the eye or by the microscope, the tissues are found to have lost all power of growth and of conferring immunity. As up to now the parallel behaviour of normal and malignant tissues in these respects seems to exclude the probability of radium having a selective action on cancer tissues, it is well to moderate the hopes as to the possible therapeutic value of radium.

We entirely approve of the attitude adopted by the Fund towards a cancer census, for the data on which such a census would be founded are untrustworthy, and we are interested to see that the French Association for the Investigation of Cancer has come to the same conclusion. The Fund has been much assisted by the willingness with which Dr. J. TATHAM has placed the resources of the General Register Office at its disposal with a view to promote the attainment of greater utility and accuracy in the statistics of cancer, but there is necessity for great completeness of the data of mortality before any useful comparisons can be made between the figures of different countries. With the question of affiliation with the International Society for Cancer Research the Imperial Cancer Research Fund has also dealt wisely. The International Society is an association founded in Berlin, and it is intended to forward the holding of international congresses at which the facts and problems connected with cancer may be discussed. It was mentioned in the last annual report of the Imperial Cancer Research Fund that it had been decided not to join this society, even though the offer was made that the first international congress should be held in London. Efforts have been made to persuade the Fund to reconsider its refusal—indeed, His Majesty the KING was presented with a petition by the International Society asking that as patron of the Imperial Cancer Research Fund he would have this decision of non-participation altered—but the policy of the Fund remains constant. It is somewhat important that the attitude of the Fund should be understood, for those unacquainted with the facts may hastily conclude that it results from some want of willingness to coöperate with other countries. In the first place the Fund has always done its utmost to assist other workers, both in this and in foreign countries. To this end it has supplied material to many laboratories both at home and abroad—in fact, to more than 30 different laboratories in foreign countries; and a large number of foreigners have been received into the laboratories of the Fund in London. The staff of the Fund is already doing its utmost to assist international workers in the investigation of malignant disease. Dr. E. F. BASHFORD, the director of the laboratory of the Fund, and his committee are, however, agreed that the time has not yet come for an international congress on cancer. The facts requiring a congress for the unanimous recognition of their importance have still to be discovered, and much more good at present can be done by active coöperation in the distribution of material than by any congress. Inasmuch as the Imperial Cancer Research Fund is representative, by its executive and other committees, of some of the most important public bodies of this country, any congress held in London under such auspices would excite great anticipations on the part of the general public, which would not be fulfilled by the results. A premature congress can only do harm; but when the time is ripe, no society will be more anxious to coöperate with other nations than the Imperial Cancer Research Fund.

An Outbreak of Cerebro-spinal Meningitis.

ONE of the curious features of infective diseases is their tendency to periods of waxing and waning intensity, the causes of which are at present singularly obscure. In the case of the rarer epidemics the periods of prevalence afford special opportunities for the study of the nature of the maladies, and it is important that the occasions offered should be utilised to the full. A disease which in recent years has presented signs of increased activity, both in this country and in other parts of the world, is cerebro-spinal meningitis, and our knowledge of this affection has distinctly increased as a result of the studies to which it has been subjected by many observers. A recent contribution of considerable interest has been made by Dr. DAVID J. MORGAN in a pamphlet embodying an account of an outbreak of "spotted fever" which occurred in Swansea during 1908.[1] Dr. MORGAN raises several points worthy of more extended investigation. The whole number of cases with which he deals amounted to 63, and short clinical notes are given of all of them. The male patients outnumbered the female, as is usual in this affection, by 37 to 26 cases. Rather less than half of the whole number presented the peculiar rash from which the appellation "spotted fever" arises; but it must be borne in mind that typhus fever is also known by this name, and that the two maladies were not distinctly separated one from the other in days gone by. Hence it would be better, we think, to abandon this term for cerebro-spinal meningitis, the term being really more suitable for typhus fever, where the form of exanthem is much more constant. It is generally supposed that infection in cerebro-spinal meningitis is carried by the air and that the germs are inhaled by patients, the throat, nose, and tonsils being the portals of entrance. Dr. MORGAN'S observations do not bear out this supposition. Indeed, he found that cases of apparen direct infection were rare, only three instances occurring i which more than one member of a household suffered. Th distribution would seem to be more like that of enteri fever than of immediately contagious diseases, such as scarle fever or measles, and Dr. MORGAN suggests the alimentar canal as the portal of entry, supporting his view on th severity of the abdominal symptoms encountered, on th occurrence of necrotic areas in the liver, and on the constant enlargement of the abdominal lymphatic glands seer after death.

The resemblance presented by certain cases of cerebrospinal meningitis to enteric fever and the difficulties in diagnosis which may result are perhaps not generally recognised. Dr. MORGAN even finds that the serum of these patients may agglutinate typhoid bacilli in a dilution of 1 in 50, a phenomenon which would be looked upon as a positive reaction to Widal's test. Three cases out of five tested did so in his experience, and a fourth gave a positive reaction in rather less dilution. He suggests, indeed, that cases of cerebro-spinal meningitis have, on the strength of this peculiarity, been called enteric fever at various times, and quotes published instances apparently illustrating this source of error. It is of considerable importance that further light should be thrown on the frequency with which this serum reaction does actually occur, and we sincerely hope that those who have the opportunity of studying cases of cerebro-spinal meningitis will pay attention to this point and record their experiences. Apart from this, and from the gravity of the abdominal symptoms, in a certain proportion of cases there should not be any great difficulty in distinguishing the two affections. In cerebro-spinal meningitis the onset is invariably sudden, as is well brought out by Dr. MORGAN'S report, and the pain in the head is excruciating in character, not the dull frontal headache of enteric fever. Stiffness in the neck and retraction of the head are noted in over 90 per cent. of the cases of cerebro-spinal meningitis, and actual opisthotonos was recorded in 73 per cent. of patients. A further assistance in diagnosis is afforded by the occurrence of Kernig's sign—the stiffness of the muscles at the back of the thigh rendering it impossible to extend the leg when the thigh is flexed to a right angle with the trunk. Lastly, the examination of the fluid obtained by lumbar puncture will almost always lead to a correct diagnosis. It varies, it is true, considerably in different cases, from a thick creamy pus to almost clear straw-coloured fluid, but the meningococcus is usually to be found without difficulty.

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[1] An Account of an Outbreak of Spotted Fever (Epidemic Cerebro spinal Meningitis) [illegible] David J Morgan, M.A., M.I [illegible] al Officer of Health of Swar [illegible] ewspaper Co., Ltd., High-street. 1909.

An interesting question with regard to treatment is raised by Dr. MORGAN, who was struck by the extraordinary divergence in the rate of mortality among cases treated respectively at home and in the isolation hospital at Swansea. Whereas 93 per cent. of the former cases died, in the hospital the death-rate was only 44 per cent. He attributes this remarkable difference to the fact that cases in the hospital were treated by lumbar puncture as a routine measure, whereas when home treatment was carried out members of the patient's family often objected to this procedure. No serum was used as a remedy throughout the epidemic, and Dr. MORGAN is inclined to attribute the amount of success which has been claimed for serum-therapeutics in this disease to the fact that the use of this remedy necessitates a preliminary lumbar puncture, to which, and not to the serum, the patients' recovery is due. At present we must conclude that there is not sufficient evidence available to decide as to the value of serum in cerebro-spinal meningitis. The remedy has not been very long introduced into practice and several brands of serum are prepared, the comparative efficacy of which has not been determined. We are therefore not prepared to admit that Dr. MORGAN'S experience by itself can be allowed to counterbalance such reports as have been made by others in this respect. Nevertheless, he makes out a good case for careful investigation as to the amount of good which is to be attributed to the serum and to the mere withdrawal of spinal fluid respectively. So far as we are aware, no harm has ever been traced to the injection of serum, so that there is no reason to feel reluctant to make trial of it. As the withdrawal of the spinal fluid will presumably be followed by the exudation of a fresh supply to take its place, it would be of interest to compare the bacteriolytic and opsonising values of the fluid withdrawn with those of the serum supplied for treatment. If this were done in a fair number of instances, some theoretical inferences might be drawn as to the probable value of serum as a local dressing for the spinal cord and brain, since it is as a local application that it has been found useful, authors being apparently agreed that ordinary subcutaneous injection is not of any value in this affection. Be this as it may, we congratulate Dr. MORGAN on the careful observation which he has made of the epidemic which came under his notice, and hope that his report will be widely studied in order that the points which he has raised may be investigated by others, and that advances may result in the diagnosis and treatment of one of the most fatal diseases which afflict European nations.

The Food of the Soldier.

FOR some time past a War Office committee has been considering the various questions concerning the health of the soldier produced physiologically by his food, training, and clothing, and as this committee is composed not only of military officials of great experience, such as Surgeon-General Sir ALFRED KEOGH, Director-General of the Army Medical Service, Surgeon-General Sir T. J. GALLWEY, Colonel S. P. ROLT, inspector of gymnasia, and others, but also of scientific men such as Sir F. TREVES and Dr. J. S. HALDANE, its conclusions deserve careful consideration at the hands of all interested in the well-being of the army. The third report of this committee has recently been issued, dealing with the oft-discussed question of the soldier's food. The report itself is short, consisting only of a dozen pages, but it is accompanied by six appendices, of which the first four contain details as to the analysis and packing of various brands of tinned meats supplied to the army by Major W. W. O. BEVERIDGE, R.A.M.C., assisted by Captain H. B. FAWCUS, R.A.M.C., and Major C. E. P. FOWLER, R.A.M.C. The fifth appendix by Major BEVERIDGE deals with the composition of emergency rations; and the sixth gives a useful statement of the various rations supplied to foreign armies, compiled by Lieutenant-Colonel W. G. MACPHERSON, R.A.M.C.

The report itself deals chiefly with the quantity, nature, and variety of the soldier's food under ordinary conditions—that is, his peace ration—and the arrangements that exist for his messing. From time to time various criticisms have been passed on the amount and kind of food supplied to our troops, generally more or less unfavourable. These comments have sometimes been the outcome of zeal for the soldier's welfare rather than of knowledge as to what is actually done for him, or, indeed, as to what work he himself has to do. It has often been supposed that he is much underfed, the assumption being that what is called the "ration"—i.e., a *pound of bread and three-quarters* of a pound of meat—is all the food that he is provided with under ordinary conditions in barracks in this country. In addition to this, however, he has a "messing allowance" of *3d.* a day, which is expended by the commanding officer of the regiment or unit, to the best advantage, in the purchase of vegetables, cheese, materials for puddings, and the like, as well as various articles that go to make up a breakfast menu, such as bacon, eggs, fish, and oatmeal. In any properly managed regiment the soldier gets a substantial breakfast, a meat dinner with two vegetables, and on most days of the week a pudding or cheese, as well as a tea meal with bread and cheese or butter. At supper-time he can always procure a meal in the regimental institute for 2*d*. or 3*d*., and in some corps a light supper of soup and bread, or the like, is provided gratis. The committee have worked out the food values of the various meals supplied in four different corps. These comprised a cavalry regiment, an English infantry battalion, a Scottish battalion, and an infantry depôt. There was not much variation between these different supplies; reckoning the food value in Calories per day per man, the dietaries supplied gave averages of 3478, 3340, 3248, and 3409 for the units in the order just mentioned. On an average for the whole four regiments, the protein supplied daily was 133, the fat 115, and the carbohydrates 424, stated in grammes. The committee have taken ATWATER'S diet for men doing moderate work—viz., one containing 125 grammes of protein and affording a total energy value of 3500 Calories, as the standard for comparison—and find that though the protein supplied in each case is sufficient, the average Calorie value does not quite reach 3500 in any of the four dietaries examined. But they point out that "this dietary is nearly always supplemented by food bought for supper at the canteen or elsewhere, and the pay of all soldiers is now sufficient to enable this to be done without hardship. The amount thus bought probably brings up the average energy value of the food to fully 4000 Calories, and at the same time gives elasticity to the diet, as each man can select the quality and amount of food which suits him." There can be no doubt that it is in practice wiser not to provide all the dietary according to regulation, but to allow a certain amount of individual choice. The soldier's pay is amply sufficient to enable him to spend 3*d*. or 4*d*. a day on extra food, and it has been found to be the case that he does actually, on an average, do so in the regimental institute. One important recent improvement is noted by the committee. The Army Council has now granted the messing allowance of 3*d*. a day to recruits as well as to trained soldiers. These newly enlisted "growing lads" have often been on short commons for a considerable time before enlistment and need feeding up to enable them to get through their work properly. Various barracks and depôts were visited, and it is reassuring to learn that, from an examination of the articles of food supplied, the cooking arrangements, and the messing books, the committee believe that, "taking into account the extra food which the British soldier is now well able to buy when he requires it, he receives, during peace, sufficient food; and ...... the quality and variety of the food are satisfactory." There is, we believe, no fixed scale applicable to warlike operations generally in the British army, each campaign being dealt with according to the circumstances of the country and climate, and modifications being continually introduced as a result of experience up to date. The committee analysed the South African war ration, taken at its minimum, and give its nutritive composition as: protein, 133; fat, 105; carbohydrate, 528, in grammes, producing in all 3903 calories. This is said to have been the minimum, and from all accounts it was certainly very often supplemented by fresh meat, grain, &c. The Calorie value is less than that of the Japanese war ration in Manchuria (4343) or that of the Russian army in the same campaign (4891). The committee consider that for men engaged constantly in marching and fighting, probably 3900 Calories would be insufficient unless supplemented from other sources. They recommend that experimental observations should be made on this point. This is an important matter which appears to need determination.

In regard to the arrangements that are made for messing the troops, the committee speak favourably of what is known as the "restaurant system." As originally introduced several years ago, this system was intended to give a much greater variety of choice in the food provided and to improve the manner of serving it, so as to make the meals more appetising and attractive to the soldier. It does not seem that in its entirety it has proved practicable to any great extent, but in a modified form the system is now in use in many regiments and depôts. Instead of the bare tables, coarse cookery, and wastefulness of the old barrack-room dinner, in very many regiments nowadays the men sit down to tables provided with a decent table-cover (generally of American cloth) and furnished with cruet stands, vegetable dishes, and so on. The joints are carved by trained carvers, so that not only is there much less waste, but the food is served in a more appetising way. There is also much greater variety in the cooking methods; two vegetables at least are provided, and nearly every day pies or puddings of some kind. This forms a great contrast to the old primitive ways, universal until some ten years ago, when the joint of meat was hacked about by the man in the mess who had the strongest wrist. The waste was then excessive, and no attempt was made to render the dinner, or other meal, anything but a hurried gorge, adjournment being made to the canteen as soon as possible to assuage thirst. Of late years the custom has been introduced of allowing beer and mineral waters to be served with the dinner meal; this practice has been found not only not to increase beer-drinking, but even to diminish it (the canteen being less resorted to), and has therefore tended towards temperance. It has been much appreciated by the men, and the committee recommend the general adoption of the practice.

Coming to the appendices the report by Major BEVERIDGE on the composition of tinned meats contains many observations of interest. Considerable variation, for instance, was found to exist in the composition of individual samples, the fat in corned meat tins being sometimes as low as 7 per cent., and sometimes as high as 60 per cent., reckoned on the dry contents. The committee, after experimenting on their own proper persons, conclude that meat with less than about 10, or more than about 15, per cent. of fat, is unpalatable to most men, from which it appears that more care should be taken in averaging the contents of the tins at the time of preparation. A curious point that has long puzzled manufacturers and storekeepers in charge of tinned-meat supplies has now been elucidated by Major BEVERIDGE'S experiments; tins of meat that have passed the tests applied by the makers and have kept good for months or even years, sometimes suddenly become blown and unfit for use. This occurrence could hardly be due to injury of the tin through rust, as, if so, the gas produced by putrefaction, consequent on entrance of air organisms, would find its way out and no blowing would result. Major BEVERIDGE, and with him Captain FAWCUS, have found that an organism may be present in the meat at packing, may not be destroyed by the so-called sterilisation, may remain inert for long periods if the tins are stored at a low temperature, and finally, may develop if the temperature reaches 37° C., or thereabouts. This bacillus is non-pathogenic to animals, but decomposes the meat and renders it unfit for consumption. As it does not develop much below the body temperature, meat might be contaminated by it and yet be kept for months without showing signs of decomposition or blowing if stored in a cool place, neither would the temperature of the "warm room," in which manufacturers deposit tinned foods for a short time as a testing chamber, be sufficient to cause growth of this bacillus. But if taken to a hot climate the whole consignment might speedily become unfit for use. The recommendation is accordingly made that the temperature of the fluid in which canned-meat tins are sterilised should be raised to 120° C. (248° F.), and that this should be kept up for one hour. This is a higher and more prolonged sterilisation than is, we believe, usually the practice at present, but in view of the observations of Major BEVERIDGE and his collaborators appears to us to be justified. It is satisfactory to learn that no boric acid or other preservative was found to be present in any of the tinned-meat samples, though the nitrates, derived from the pickling fluid, were sometimes in excess.

Annotations.

"Ne quid nimis."

THE NEW PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Mr. Henry Trentham Butlin was elected unanimously President of the Royal College of Surgeons of England at the meeting of the Council held on Thursday, July 8th, at the College. This event was generally anticipated, for Mr. Butlin's claims upon the titular leadership of his branch of the profession in this country are very strong. He is well known at home and abroad as an operating surgeon and pathologist. He has held almost every possible post in connexion with his College, he has won the Jacksonian Prize, he has delivered the Hunterian oration, the Erasmus Wilson lectures, and the Bradshaw lecture. But outside the College he has been equally prominent, for in addition to being consulting surgeon to and lecturer upon surgery at St. Bartholomew's Hospital he has been President of both the Pathological and the Laryngological Societies, member of the Senate and Dean of the Faculty of Medicine of the University of London, and Vice-President of the British Medical Association. Mr. Butlin brings, therefore, to his new and important post great experience both in organisation and in the exercise of authority, while his well-known happiness as an orator will stand him and his College in good stead. We offer him our best congratulations.

THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

THE seventy-seventh annual meeting of the British Medical Association will be held at Belfast on July 23rd, 24th, 26th, 27th, 28th, 29th, and 30th next, under the presidency of Sir William Whitla, Professor of Materia Medica and Therapeutics, in the University of Belfast. Fifteen scientific sections have been arranged and will meet daily from Wednesday to Friday in the Queen's College at 10 A.M.—viz., Anatomy and Physiology, Dermatology and Electro-Therapeutics, Hæmatology and Vaccine Therapy, Diseases of Children, Navy, Army and Ambulance, Hygiene and Public Health, Laryngology, Otology, and Rhinology, Medicine, Obstetrics and Gynæcology, Ophthalmology, Pathology, Pharmacology and Therapeutics, Psychological Medicine, Surgery, and Tropical Medicine. On Tuesday, at 2.30, Sir William Whitla will be inducted to the presidential chair, and on the same evening will deliver the presidential address in the Assembly Hall, Belfast. On Wednesday, July 28th, at 12.30 P.M., Dr. R. W. Philip will deliver the address in Medicine in the library, Queen's College. On Thursday, July 29th, at 12.30 P.M., the address in Surgery will be delivered in the library, Queen's College, by Mr. A. E. J. Barker. On Friday, July 30th, at 12.30 P.M., Sir John W. Byers will deliver the address in Obstetrics in the library, Queen's College. At 8 P.M. a popular lecture will be delivered by Dr. J. A. Macdonald. As the programmes throughout promise particularly interesting discussion, owing to the proposed attendance of men of eminence from foreign countries and various parts of the British Empire, the success of the meeting from every point of view is assured.

THE FEES OF OUR ANCESTORS.

UNDER the above title Mr. D'Arcy Power has recently contributed to *Janus* an interesting little paper on the emoluments of physicians at various periods. With the art of a practised writer he at once arrests his reader's attention by reminding him of two physicians whose custom it was never to receive a fee at all—namely, the "unmercenary" saints Cosmas and Damian. At the opposite extreme comes the fee which Mr. Power has omitted to recall—namely, that received by Democedes of Crotona, who as a prisoner was in the service of Darius Hystaspes at Susa. Darius had dislocated his foot at the ankle-joint and Democedes was called in after the failure of an Egyptian surgeon. His treatment was successful, and he was thereupon presented with two golden fetters, a delicate allusion to his position. Having delighted Darius by asking him "whether he meant to double his punishment," that monarch told him to go through the harem as the man who had saved the king's life. The ladies each gave him a golden vessel piled up with *staters*, so many of which fell on the floor that the slave who conducted him made a handsome fortune by picking them up. He was afterwards called in to treat Atossa the Queen for a mammary ulcer which he succeeded in curing. Such patients, however, as the Great King and his consort do not fall to every man's lot, though in quite modern times the high feudatory princes of India have paid comparable fees. In the Middle Ages men were more mercenary, and Mr. Power gives an amusing quotation from John of Arderne (*circa* 1370) as to the methods of bargaining with a patient. Arderne's highest fee for the cure of fistula in ano was £40 down, a suit of robes, and 100*s.* per annum during the life of the patient. Patients in the Middle Ages were no more ready to pay their fees than now, and Gilles de Corbeil, a celebrated twelfth century physician, points out in language which must surely strike an answering chord in the heart of the present Chancellor of the Exchequer, that the rich man must pay in accordance with his wealth, though he adds as a saving clause "if his mind is as wide as his purse" then—

> "Aggravet hic medicina manum: sumptus onerosos
> Exigat: hic positos debet transcendere fines."

In another place he remarks that it is as well for the physician to demand his fee before the patient is well—

> "Tutius esse reor, quod certe novimus omnes,
> Dum dolet accipere, vel munere posse carere."

Mr. Power concludes his paper with an account of eighteenth-century fees. Physicians like Radcliffe and Mead charged a guinea; country apothecaries charged much less and made their money chiefly by the sale of medicine. Mixtures, as Mr. Power reminds us, were sent out as draughts in one ounce phials with a cork which sometimes had one pill in a box stuck on to it. Draught and pill cost 1*s.* 9*d.* As many of our readers will remember, the directions were written on a slip of paper attached to the neck of the bottle, and such a draught in the half light of a sick room bore a ludicrous resemblance to the human inhabitants of a Noah's Ark as manufactured in about 1860, up to which time the custom of separate draughts endured. Readers of Swift will remember the story he tells of Stella. "A quaker apothecary sent her a vial, corked; it had a broad brim and a label of paper about its neck. 'What is that,' said she, 'my apothecary's son?'"

MORTALITY FROM MEASLES.

Satisfactory as have been the results on public health and longevity of improved sanitary administration in England and Wales during the last 30 years, there are still many features in our national mortality statistics which, without undue pessimism, clearly point to distinctly preventable waste of life, especially among infants and young children. The weekly returns of the Registrar-General, for instance, have recorded during the first six months of this year no fewer than 6381 deaths from measles in 76 of the largest English towns. Of these deaths it may safely be estimated that more than 90 per cent. were deaths of infants and children under the age of five years. In the corresponding six months of 1907 and 1908 the fatal cases of measles in these 76 towns did not exceed 4596 and 2692 respectively. The exceptional mortality from this disease during the first half of this year has probably been mainly due to unfavourable meteorological conditions, but it is an unquestionable fact that the generally improved sanitary condition of the English population during recent years has not effected any considerable reduction in the death-rate from measles. The annual rate of mortality from measles per 1,000,000 of the English population, which was equal to 379 in the ten years 1871–80, increased to 441 in 1881–90, was 414 in 1891–1900, and has been 311 in the first eight years of the current decennium. It should, moreover, be borne in mind that these death-rates from measles, calculated on the population at all ages, understate, for comparison in the several periods, the present true rate of mortality from this disease, if corrected for the recent marked decline in the proportion of young children in the English population. It cannot be doubted that the case-mortality of measles mainly depends upon watchful nursing and care during convalescence; it is therefore not surprising to find that measles mortality is, to a great extent, confined to those classes in which careful nursing and treatment are neglected or are practically impossible. The class-mortality statistics issued by the Registrar-General for Ireland, relating to the Dublin registration area, throw valuable light on class-mortality from measles, and suggest the desirability for similar statistics on a larger basis. During the two years 1907–08 the deaths from measles in the Dublin registration area were 304, of which only 23 occurred among the professional, independent, and middle classes, estimated to number 104,624 persons of all ages, whereas the number occurring during the same period among the general-service class (excluding artisans and petty shopkeepers), consisting of an estimated population of 154,279 persons, was 223. The calculated death-rate from measles in these two sections of the Dublin population during 1907 and 1908 was more than seven times as high among the general-service class as among the professional, independent, and middle classes. The deaths from measles in England and Wales during the past eight years of the current decennium have averaged more than 10,000 per annum, and will this year very considerably exceed this number. It is impossible to doubt that the large majority of these deaths are distinctly preventable by careful nursing and after-treatment. Without venturing entirely to attribute the remarkable decline of the mortality from scarlet fever in recent years to hospital isolation and treatment, the experimental trial of hospital isolation and nursing for measles naturally calls for serious consideration. In connexion with this subject it is interesting to note, in the recent appeal by the London Fever Hospital for financial support, that the hospital treatment of measles has recently been adopted at that institution. The result of this experiment cannot fail to be helpful in the consideration of the desirability for the creation of facilities for the hospital treatment of measles as a possible means of checking the present waste of child-life caused by the persistent mortality from this disease.

THE REPORT OF THE LADY ALMONER TO ST. THOMAS'S HOSPITAL.

Not long ago we devoted a leading article to a consideration of the report made by Miss Norah B. Roberts to the recent Poor-law Commission upon her inquiry into the extent of hospital abuse in London, and we mentioned her recommendation that fully trained lady almoners should be appointed at all hospitals in order to limit its occurrence as much as possible.[1] The report of Miss A. E. Cummins, lady almoner to St. Thomas's Hospital, upon the work of her department from March, 1908, to March, 1909, affords a timely confirmation of Miss Roberts's opinion, and is a document which should receive wide circulation amongst other hospitals and careful study by those responsible for their management. The lady almoner's department at St. Thomas's was instituted "to check the abuse of the out-patient department by patients who are either in a position to pay for treatment or who are too poor to benefit by any assistance other than that obtainable through the Poor-law; to ensure as far as possible that all out-patients to whom treatment is granted shall benefit to the full by that treatment; and that no time, consideration, or money shall be withheld, either by the patient or by charitable agencies, to enable the patient to coöperate with the hospital in carrying out the prescribed treatment." The work has now been established for four years and has been extended considerably since its inception, its plan being that only as many cases as can be dealt with thoroughly shall be undertaken at all. No routine inquiry concerning wages, rent, and so on, has been found of value in adjudicating upon the suitability of an applicant for hospital relief. In order to carry out the thorough personal investigations that are necessary the coöperation of existing charitable agencies has been secured, a plan which it will be remembered was recommended by the recent Commission for the solution of other problems in poor relief. Miss Cummins is gratified at the help that she found available in this work, the demand for which almost seems to create the supply. It has been possible to visit 2942 patients at home as against 170 during the first year of the work, which, although it only represents a fraction of the patients attending the hospital, shows a gratifying and progressive vigour in the life of the department. Particular pains are taken not to multiply the number of visitors to any one family, for the reason given epigrammatically in the following words: "The industrious woman has no time to receive constant visits from church, chapel, rent collectors, and charitable agencies. The idle may be quite willing to pass their time in this way, but should not be encouraged to do so." A chief object of the work is to help people to help themselves, and it has been found in several cases that by inducing a breadwinner to save up money to buy a surgical appliance or extra nourishment for his wife the habit of saving has been established, to remain after the immediate necessity has passed Special efforts are directed to the provision of such necessities of treatment as proper food and fresh air, for it is recognised that a vast amount of the skilled advice given to hospital out-patients must necessarily be wasted if they are left to their own devices to carry it out; but each is expected to contribute to his cure according to his means. "Cases," says Miss Cummins, "are not classified as deserving or undeserving ...... but as helpable or not helpable. Most cases prove helpable in the long run, though not always on the lines first expected." A special section of the report is devoted to phthisical patients, and a system for their management has been evolved from a study of the family life and progress of 200 cases. When the home conditions are very deplorable the case is referred to the Poor-law authorities, a procedure which should not be neglected by hospital almoners. In more suitable cases other relief agencies are asked to provide extra food in the homes of patients, who are taught the virtues of fresh air and the evils of spitting. All very early cases have been sent to sanatoriums, but an encouraging experiment has been made in one instance by the erection of an open-air shelter in Camberwell, and it is hoped that the plan may be extended for the treatment of patients unable to leave their homes. The report of the cases convicted of hospital abuse affords striking reading; we quote the most flagrant. "A. B., medical casualty, 28, married man, said he rented a flat at 10*s.*, and earned £2 as a clerk. His wife looked after the two children and did the housework. No club." He was refused medicine on the strength even of this statement, and a letter was sent to a private practitioner who had attended him and who answered: "A. B. is in partnership with his father in trade. To my certain knowledge the father gave £14,000 for an estate and a freehold site for a church, &c., for which he was publicly thanked by the bishop. A. B. lives very comfortably in a rather small house, where they keep a maid-of-all-work and an old woman to look after the children." It would be interesting to know whether such a despicable application for relief as this comfortably situated person made to the hospital is actionable; certainly it seems to be an attempt to obtain money—or its equivalent—under false pretences. Fortunately, such cases by no means represent the majority of out-patients, many of whom "overstate rather than understate the family incomes, possibly from a feeling of pride." Some difficult cases were met with of patients going from one hospital to another, causing deplorable waste. In more than one case a lover of medicines was found to be attending two institutions simultaneously for the same disease. The last part of this instructive report deals with the help given by the lady almoner's department to the maternity department, help which included a limited number of free meals to nursing mothers. Miss Cummins deprecates a wide extension of this plan: she "cannot fail to acknowledge the want of backbone that is increasingly evident amongst the working-classes," for the charitable aids, the free meals for school children, and other free gifts to the poor are coming to be regarded as the working-man's right. We feel constrained to admit a substantial foundation for her complaint and commend to other hospital authorities the system upon which her department is worked—namely, to subsidise and not to supplant the efforts of the poor on their own behalf, with the object of fostering their spirit of independence whilst ministering in a rational manner to their infirmities.

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[1] The Lancet, May 29th, 1909, p. 1534.

THE TUBERCULOSIS CRUSADE IN WESTERN IRELAND.

IN "A Holiday in Connemara" Mr. Stephen Gwynn, M.P. for Galway and a well-known *littérateur*, has put on record his impressions of the work of the Gaelic League in the "Crusade against Tuberculosis" among a section of the Irish population peculiarly liable to the inroads of disease. "One by one," he says, "the young and strong are being smitten; and the disease (tuberculosis) is being cruelly multiplied by others again, who, having gone to the towns of America or Great Britain, with lungs adapted by generations of heredity only to the soft moist air of Western Ireland, have fallen an easy prey to the white pestilence, and, broken down in health, come home for a few years, to cough out their lives in poison among their nearest friends; to linger out in cabins where no window is made to open, where folk sleep terribly crowded, and where the earthen floors become perfect nests of the bacilli." This passage was written as lately as last autumn, but it is cheering to reflect that then and for some time past the most thorough prophylactic measures had been initiated in Connemara and the districts of the neighbourhood. Fascinating is Mr. Gwynn's account of how Dr. Seumas O'Beirn of Tawin, himself a Gaelic speaker, came to the conclusion that typhus fever and tuberculosis seemed to be endemic in those districts where Irish alone was spoken, and where consequently practical English ideas on health had not penetrated into the popular consciousness. To him apparently belongs the honour of having first diverted the energies of the Gaelic League, which aims at reviving and using the Gaelic tongue, into a practical channel, for it was he who first conceived the eminently sensible idea of lecturing on health and anatomy in Gaelic—as Erse is universally called in Ireland—to those Irish peasants to whom English still remains a foreign language. Gaelic, as Mr. Gwynn points out, is as yet a language so new to technical phraseology, that explanation must of necessity be made in the very simplest terms. But Dr. O'Beirn announced none the less a series of lectures on the human body and the origins of disease, to be delivered in the Irish tongue and illustrated with lantern slides. He began his course in Kilmilcin in the Joyce Valley, and the quick-witted peasantry crowded to hear him, and were emulous to pass examinations in the laws of health. Among other things, probably, they were taught that windows should not be mere panes of glass, but should open. Indeed, we understand that the value of fresh air, in a country rich in that commodity, was impressed at every turn on the eager students who thronged to the Kilmilcin lectures. Shortly afterwards the Gaelic League took up the cause, a distinguished Dublin surgeon having invited their assistance in an inaugural sessional lecture at one of the Dublin hospitals as lately as last autumn. The Celt is so intelligent that there is no limit to the possibilities of reform when he sets his heart upon attaining it. The appeal to the Celtic imagination is being made in more ways than one. Dr. O'Beirn, for instance, has written and sustained the leading part in a propagandist medical play ("An Dochthuir"), which deals amusingly with the difficulties encountered by an English-speaking medical man in an Irish-speaking round of practice. The drama has been acted by local players in Connemara. An ingeniously conceived vehicle for the dissemination of hygienic doctrine, it might well be imitated by all those who fight unenlightenment in any rural district of England.

SALT AND SMOKE.

FOR some time past the public taste has been gradually growing in favour of the mild-cured article, with the result that at the present moment strong salted or smoked foods are not in evidence as they used to be and are rarely called for. The ham and the bacon must be mild cured, and even butter must be fresh and absolutely without a salt flavour. This preference for the so-called mild-cured article has undoubtedly furnished an excuse on the part of caterers for the use of stronger antiseptics than salt or smoke, and antiseptics which are, comparatively speaking, tasteless, or at any rate which add no special flavour to the food. The old-fashioned antiseptics, salt and smoke, are thus sharply distinguished from modern antiseptics, inasmuch as the former not only preserved food but served also as condiments. In the case, however, of certain preserved foods, although the salt may be left out, the smoke must be retained, as otherwise the food loses its individuality The kipper, for example, is inseparable from a smoky flavour, as is also dried haddock or dried salmon. We have heard that a "smoke essence" is employed to impart the kind of palatability associated with properly smoked food, but such practices, coupled with the use of antiseptics, would readily account for the regrettable fact that cured articles of diet are not now up to their former standard. Assuming that the mild-cured article, and as a particular example we may choose butter because it is an indispensable article of the dietary, is free from objectionable antiseptics, it is still left more helpless against the attacks of micro-organisms than were the old-fashioned cured foodstuffs. Experiments have, in fact, shown that the addition of salt to butter is a factor of great importance from the point of view of germs. In unsalted butter the growth of micro-organisms is more vigorous and continues for a longer time than is the case with salted butter. Mycelial fungi if present disappear entirely after a while in salted butter, while in fresh or unsalted butter they multiply rapidly. The quality of butter appears to be improved by a small percentage of salt (say 2·5); it encourages the development of a flavour which makes butter an attractive article of food and it acts as a safeguard. Altogether there would appear to be certain valid reasons for thinking that the public preference for the mild-cured article may be an error of judgment, and there certainly is much to be said in favour of the old policy of preserving foods by salt and by smoke.

THE NATIONAL ASSOCIATION FOR SUPPLYING FEMALE MEDICAL AID TO THE WOMEN OF INDIA.

As their religion will not allow them to be attended by a male, the caste prejudices of India prevent a very large proportion of the female population obtaining medical aid in any of the numerous hospitals and dispensaries, the majority of which are State institutions. As the Government of India could not see its way to provide female aid, Lady Dufferin, during her husband's tenure of the office of Viceroy of India, nobly stepped into the gap and created a fund, which has been since known as the "Countess of Dufferin's Fund," for supplying female aid to the women of India. In the twenty-fourth annual report for 1908, just published, the association shows steady and satisfactory progress in providing relief not only for purdah but other women. The present president, Her Excellency Lady Minto, has during the year under review inspected many of the hospitals under the Fund, and has interested herself in representations made by the Association of Medical Women in India (which were referred to in THE LANCET of March 13th, p. 780), whereby they claim a more independent control of zenana hospitals. The central committee cannot at present, however, hold out any hope of a so-called "medical service" being formed under which lady doctors would enjoy the privileges of pension and other advantages which are attached to the regular Government services. The association has now in its employ 52 lady doctors of the first grade (qualified for British Medical Register), 87 of the second grade (Indian qualifications), and 529 hospital assistants, or third grade. Of female students at present training, 22 European and native ladies are shown as training for the full M.B. course, 91 as assistant surgeons, and 101 as hospital assistants, nurses, midwives, and compounders. The backbone of the whole Dufferin Fund is medical tuition; it cannot get on without medical women and its numbers are limited. But the work done is exceedingly good, and the present report shows a grand total of slightly under 2,250,000 patients (women) treated in 1908.

THE WET SUMMER.

As though exhausted by its unusually brilliant efforts of the two months preceding, the weather was a dismal failure in June and has been no better in the first part of July. Never since meteorological records have been systematically recorded has the opening of summer been so gloomy and cold, and seldom so rainy as it was during last month in London and some other parts of southern and south-eastern England; while over the kingdom generally, although the lack of warmth and sunshine was less striking in relation to the average, the month ranks as one of the most unsatisfactory Junes for many years. The chief cause of the great chilliness was the persistent predominance of winds from some point between north-west and north-east, accompanied by a very cloudy or densely overcast sky. The natural result of this ungenial combination was that while the temperature during the night-time was only slightly below the average, nearly all the days were remarkably cold for the time of year. The thermometer approached the normal on extremely few occasions. The normal maximum shade temperature for June in the south and south-east of England is between 65° and 70°, but, as will be gathered from the subjoined table, the mean of last month's maximum readings was only about 60°. Over by far the greater portion of the kingdom the 70° mark was not reached at all, and even in London, where a warm June sends the thermometer up to 70° or above day after day, it was only touched twice—on the 17th and 19th. No June except the miserably cold and wet one of 1879 has had such a low maximum in the metropolis for at least 40 years. Had the sky been fairly clear the temperature would doubtless have been considerably higher in spite of the cold winds, but it was so persistently clouded that the sunshine in London and some other parts of the south-east was the most meagre recorded in June since the automatic instruments were established in 1881. After Westminster had enjoyed 220 hours of the most brilliant sunshine in April and 297 hours in May, the June figures dropped to 91 hours—from an average of between nine and ten hours per day to one of about three hours. Such an extraordinary difference as that between May and June is probably without parallel in this country. The deficiency of sunshine was also very great in the Midlands and along the south coast, but at Jersey it was very trifling and not particularly large in the north-west of England and in North Wales. Manchester was not so badly served by the sun as Westminster. Over the greater part of England the month was much more rainy than usual, but the quantity varied a good deal, and some spots received less rain than during a normal June; at Buxton there was nearly an inch less. To enable a month to give such abnormal weather as did the one under consideration the positions and routes of the cyclones and anticyclones must also be abnormal. Last month the barometrical conditions were, in fact, generally quite different from those usually obtaining at this time of year. During an average June the space between the Azores and France or Germany is covered by a vast anticyclone of varying intensity, while the large cyclones from the Atlantic travel in a general easterly or north-easterly direction with their centres either between Scotland and Iceland or to the northward of Iceland, thus causing a flow of air over this country mainly from the south-west or south. During almost the whole of last month, however, there was an anticyclone over the Icelandic region, which frequently extended southward over the Atlantic off the west of these islands, and with such a distribution of barometric pressure the wind over this country must necessarily come from the Polar regions. Why such a displacement of the high and low pressure systems should sometimes occur is at present, and will probably remain for a long time yet, a meteorological mystery.

Stations.	Mean maximum temperature	Mean minimum temperature.	Mean temperature for month.	Difference from average	Days with rain.	Total fall.	Difference from average.	Number of hours of sunshine	Difference from average.
	°	°	°	°	*	ins	ins.		hrs.
London (Westminster)	62	49	55·5	−4·4	19	4·02	+0·81	91	−76
Bath	61	49	55·2	−4·5	16	2·75	+0·43	131	−55
Harrogate	60	44	52·0	−3·5	14	4·03	+1·53	134	?
Buxton	58	45	51·2	−3·4	11	2·49	−0·93	126	?
Nottingham	61	49	54·8	−3·5	16	2·32	+0·15	120	−77
Liverpool	59	48	53·5	−4·1	15	2·54	+0·37	160	?
Manchester	60	47	53·8	?	11	2·02	−0·85	106	?
Llandudno	60	49	54·1	−3·5	13	1·52	−0·45	188	−16
Southport	59	47	53·1	−3·8	13	2·61	+0·45	180	−27
Torquay	60	50	54·8	−3·8	18	3·35	+1·19	17	−56
Jersey	63	53	57·6	−1·4	14	3·58	+1·52	234	−7
Bournemouth ...	60	48	54·1	?	18	4·51	?	145	?
Brighton	60	49	54·5	−4·6	12	2·09	+0·17	144	−83
Margate	60	50	55·1	−3·0	13	2·34	+0·45	130	−56
Yarmouth	58	51	54·5	−2·1	12	2·25	+0·35	161	?
Scarborough	59	50	54·3	−1·3	11	2·04	+0·08	122	−55
Aberdeen	58	46	52·4	−1·5	13	1·51	−0·34	150	−37

* A day with at least 0·01 inch.

DEATH FROM OVERLYING.

THE National Society for the Prevention of Cruelty to Children recently prosecuted a Brighton woman for neglecting her four children, all under the age of 16 years, in a manner likely to cause them unnecessary suffering. The youngest of the children was a baby four weeks old, and the chief ground upon which the society based its case was the woman's drinking habits, and it was alleged that when in such a condition she could not perform her maternal duties properly. The other children, all of tender years, seemed to thrive on their surroundings; and in the absence of any direct evidence of wilful neglect—which the chairman of the bench said must be continuous neglect—the prosecution, after a two-day hearing, failed, the case being dismissed. It goes without saying that in many ways the children must have suffered from a certain amount of neglect, but while the magistrates could not see their way clear to convict they could have at least given the woman a severe caution and a warning as to her future conduct. But she was allowed to leave the court without the slightest admonishment. The sequel must surely have afforded a shock to the complacency of that lenient bench, for nine days later the same woman appeared before the Brighton coroner's court, the same baby, now six weeks old, having been found dead in bed by the side of its parents on the morning of July 8th, seven days only after the police-court proceedings had concluded. Attention was, of course, drawn to the proceedings in the police-court, and the coroner, Mr. J. E. Bush, expressed his astonishment that the magistrates did not censure the woman. Two women gave evidence a mitting that the mother of the dead child had given way t drink, but said that she was sober on the night before th morning the child was found dead. This fact seems to hav saved the woman from being committed for trial under th provisions of the Children Act, which makes a drunke parent responsible for the death by overlying of a chil for the jury expressed the opinion that the child died fro overlying. The death of the child within a few days of th prosecution by the National Society for the Prevention Cruelty to Children shows that this excellent society wa fully justified in its action. There have been many simila cases in Brighton, and only a smart sentence, when evidenc is strong, will act as a deterrent. It is among the childre of the slothful and the drunkard that infantile mortalit exerts its greatest influence.

IMPROVEMENTS AT BATH.

ON July 10th Sir Malcolm Morris was the guest honour of the Bath corporation, which had invited him t open formally an open-air drinking fountain and colonnad that will enable visitors to take the waters in the Institutio Gardens. Sir Malcolm Morris performed his duties, down t the drinking of the first glass from the new source of supply with enthusiasm for the merits of the Bath waters, fo which he professed a personal gratitude, but he also too the occasion to speak very plainly on the supineness i the past of their owners. It was a happy choice which le the corporation to invite a distinguished physician to perfor this function, the more especially since the occasion mark the establishment of wise relations between the medica men of the town and the administration of the baths, as i witnessed by a recent election of Dr. R. Carter and Mr A. L. Mackenzie to serve on the baths committee. Thi fact was commented upon with approval by the mayor, Mr W. J. Knight, after the luncheon following the proceeding in the gardens. At the same feast Sir Malcolm Morri did not fear to tell the city of Bath a few home truth about the backwardness of English health resorts in providing attractive accommodation for their visitors, and he did so in terms that the managers of spas elsewhere would do well to take to heart. "If you will take my message, Mr. Mayor and Corporation," said their chief guest, "and are not so slow in your improvements, you will rival the great spas of Europe in a way no other place can do. But you always think, and you talk for hours and hours upon ways and means. ..... You have a duty to perform to the nation and not to your town alone. If your water contains some material of benefit to human beings your duty is to use it. You have all the things to your hand here. Do it, and do it properly and at once. I have nothing to do with Bath and its rates or with your jealousies and squabbles, which I take it exist in every provincial town in the world, but ...... you possess a remedy for the cure of chronic diseases, and yet you don't supply a sufficient amount and sufficient attractions for the people who should use it." This was, perhaps, the straightest speaking that a luncheon party has ever received from its guest of honour, and we will do the city the credit to say that its corporation received the message in excellent part. The mayor, indeed, pointed out in extenuation that ratepayers had always to be reckoned with, but the enlightened action of the Chamber of Commerce, coupled with the active support of the local branch of the British Medical Association in carrying through the recent improvement, was, he submitted, a good earnest of further advances in the interests of their city. He confessed that he was in agreement with what their guest had told them. We may, perhaps, now hope for such another revival at Bath as was attempted in that city about a generation ago. Even though Bath shall never know again the glories of the eighteenth century, we are assured of the investment value to the city of money spent in the proper development of the spa such as has now been done in the provision of an open-air service of the waters.

A VEGETABLE SOURCE OF IRON.

M. P. J. Tarbouriech and M. P. Saget, in the *Bulletin des Sciences Pharmacologiques* for May, describe some experiments which they have made to find a vegetable drug containing a relatively high proportion of iron. As a result they have been able to show that the dried root of one of the docks, *Rumex obtusifolius*, contains 0·447 per cent. of iron, a proportion greatly in excess of that yet found in any other plant. Further experiments showed that the iron is present in organic combination. It is a difficult matter to isolate and identify such complex substances, owing to the readiness with which the inorganic element is split off, but evidence was obtained that the compound is analogous to the ferric derivatives of the nucleones. These substances, as shown by Siegfried, are present in milk and in the muscles and other tissues of the body, and it is thought that iron, calcium, and phosphoric acid are carried from one part of the body to another in the form of nucleone derivatives. It is believed by many pharmacologists that a large proportion of the iron administered in the inorganic form is not assimilated in the body, and on this account various organic compounds of iron have been introduced into medicine, including the glycerophosphate and the so-called "peptonate" of iron. The administration of iron in the form of a nucleone derivative as present in this species of rumex would appear to offer advantages over the other compounds of iron, and this view is supported by results that have followed the administration of the powdered rumex root by the mouth.

THE RÔLE OF THE PERINEAL BODY IN CHILDBIRTH.[1]

THAT the perineal body *per se* plays a relatively unimportant part in the support of the pelvic viscera has long been recognised by most anatomists. It is not surprising, therefore, to find that cases of complete rupture of the perineum can and do occur without any or with a relatively slight descent of the pelvic viscera. Matthews Duncan long ago called attention to this fact, but as he pointed out quite correctly, rupture of the perineum, although it does not cause prolapse, yet markedly facilitates it. He compared the rôle of the perineum in prolapse of the uterus to that played by it in childbirth, and contended that just as a rigid perineum prevents the escape of the fœtal head so an intact or a partially torn perineum prevents the conversion of a case of prolapse of the second degree into one of complete procidentia uteri. Dr. R. H. Paramore cites Matthews Duncan's conclusions with approval, but would have us believe that the part played by the perineum in childbirth is neither necessary nor good. That it is not necessary he holds to be shown by the occurrence of normal labour in the case of its previous rupture, and that it is not good he maintains because he thinks its presence promotes over-stretching of the pubo-rectalis portion of the levator ani muscle—viz., those fibres which take origin from the back of the pubes, and encircling the rectum, are attached in the middle line in the ano-coccygeal raphe, and so produces marked weakening of the pelvic floor. The muscles inserted into the perineal body are of little importance, comprising a comparatively small bundle of fibres of the pubo-rectalis portion of the levator ani and the internal and external sphincter muscles of the anus. The great stretching that all the structures in the perineum undergo during childbirth is shown by the fact that the distance from the anterior margin of the pubo-rectalis muscle to the fourchette at the time of the birth of the child's head through the vulva measures some five inches, of which the stretched perineal body itself accounts for three inches or more. Dr. Paramore maintains that the tension of these thinned-out perineal tissues determines a forward projection of the fœtal head, and at the same time the plane of the vulvar outlet becoming extremely oblique and approaching the coronal plane, is in this way considerably removed from the plane of the pelvic outlet which is almost horizontal in direction. The posterior extremities of these two planes are therefore at a considerable distance from one another, while their anterior extremities are close together. The actual distance separating their two posterior extremities is usually some five inches. The view put forward ably by Dr. Paramore is that since these apertures are not in planes parallel to one another an ovoid body such as the head of the fœtus passing through them at the same time must, while it is passing through one with its long axis perpendicular to the plane of that aperture, pass with its long axis placed obliquely through the other. From this he argues that when the head is traversing the vulvar outlet with its long axis at right angles to that plane it can no longer be passing in the same and most advantageous manner through the opening of the pubo-rectalis muscle, and therefore this muscle is subjected to an undue degree of stretching. If, however, the perineum is destroyed by tearing, then the forward projection of the head produced by that body no longer occurs, the head does not pass through the opening of the pelvic floor with its long axis placed obliquely to the axis of that plane, and therefore the pubo-rectalis portion of the levator ani muscle is not stretched to an excessive degree. On these grounds Dr. Paramore holds that the perineal body plays an important and pernicious part in the production of over-stretching of the pelvic floor. The argument is an ingenious one, but we think that Dr. Paramore has lost sight of the fact that the head is undergoing a marked movement of descent during the time that extension is taking place. It is not correct to assume, as apparently he does, that the head passes through the two planes, that of the pelvic aperture and that of the vulvar outlet, at the same time; it does not. Indeed, at the time that the suboccipito-bregmatic diameter is engaged in the vulvar outlet, if we assume that the distance from the anterior margin of the pubo-rectalis portion of the levator ani muscle to the fourchette is five inches, as the author allows, the whole head has already passed through the aperture of the pelvic outlet, since even in a greatly moulded fœtal head the distance from the bregma to the chin measures not more than five inches and usually less, while at this stage of delivery the back of the neck, or at any rate a portion of the back of the head well below the level of the occipital protuberance, is in contact with the under surface of the pubes. Unfortunately there are no frozen sections available of the latter part of the second stage of labour which would enable us to determine with certainty the exact relation of the head or of the neck of the fœtus to the plane of the pelvic outlet at the time that it is engaged in the vulvar outlet. Barbour's section of the early part of the second stage does indeed bear out Dr. Paramore's contention, since it shows that the head is already slightly extended, to a greater degree at any rate than during pregnancy, at a time when the forecoming part of the head is only just appearing in the vulva. On the whole, we are inclined to think that Dr. Paramore's hypothesis is a correct one, but at the same time we feel that he has rather over-exaggerated the amount of distension of the levator ani muscle and of the pelvic floor thus produced, and that he regards the action of the perineal body in this matter as more harmful than it is in reality.

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[1] Vide p. 134 of this issue.

CHICAGO CAMPAIGN FOR CLEAN MILK.

THE sanitary authorities of the city of Chicago have been setting a good example in regard to the milk-supply. In 1908 an ordinance was passed prohibiting the sale of milk unless it was obtained from cows that had been tested satisfactorily with the tuberculin test. As, however, such a rigorous measure could not be at once applied, it was decided that for a period of five years milk from cows that had not been thus tested could be sold in Chicago if it was pasteurised. This latter stipulation was all the more necessary as the sanitary condition of many of the dairy farms is very defective. The water from the wells supplying these farms has been analysed, and when found to be contaminated the milk-supply was stopped until a new and safe well had been dug. Farmers are also advised how to conduct their work on sanitary lines and are compelled to notify cases of disease occurring in or about their farms. During the present year there has been a re-inspection of all the farms, and wherever the orders of the Chicago health department have not been carried out notice was served that the supply of milk would be cut off in five days. This delay of five days enables the city dealers to obtain a supply from another source. The city authorities appeal to these dealers and to the general public to help in bringing pressure to bear upon the dairy farmers, and urge that everyone should make inquiries as to the place whence the milk is obtained which it is proposed to buy. Thus during the month of March last the milk from 60 different farms had to be kept out of the city because the regulations of the health department had not been observed. But it is not only necessary to see that the milk introduced into a town is wholesome when it arrives, measures must also be taken to prevent its contamination while exposed for sale and after it has been purchased. In regard to the latter, advice is given throughout the poorest districts in Chicago to indicate how ice-boxes can be made in which a bottle of milk can be kept at such a small cost that the poorest can afford the outlay. Any box about 18 inches long and 13 inches wide and deep will do. In the centre is placed a circular pail or can 8 inches in diameter which is high enough to hold a quart bottle of milk. Round this pail there must be a cylinder to protect it and so that it may be lifted in and out. In the pail the milk-bottle stands surrounded by ice; below and all round the box is filled up with sawdust. The addition of a little soda will prevent rust. For a lid the best thing is to fasten together some 50 old newspapers. Anyone can make such an ice-box as this. It will hold four 8-ounce feeding-bottles and will not cost a penny a day in ice. The poor of Chicago are being taught to preserve in this manner the milk used for the feeding of infants and children. The construction of such an ice-box, even where the materials have to be bought, should not amount to more than about a shilling. In regard to the sale of milk there is an excellent regulation which reads as follows: "Between May 1st and Nov. 1st all windows of shops shall be provided with fly- and dust-screens and all doors shall be provided with self-closing door screens." Now that the pernicious action of flies and the rôle of dust as a disease-carrier are better understood the importance of the regulation will be appreciated. It is time that all foodstuffs, but more especially milk, should be protected from dust and flies. Pastry and sweets are especially attractive to flies, and a law or regulation should compel the dealers in such articles to cover them over with fly- and dust-screens. That the sanitary authorities of so important a city as Chicago have taken action in this respect is encouraging, and we recommend their example to the attention of the sanitary authorities in this country.

REMOVAL OF AN EMBOLUS FROM THE COMMON ILIAC ARTERY WITH RESTORATION OF THE CIRCULATION.

IN the *Journal of the American Medical Association* of May 22nd Dr. John B. Murphy of Chicago has reported a case in which he performed a novel and daring operation. A married woman, aged 41 years, was admitted into hospital on April 29th, 1909. She had enjoyed good health until five years before this time, when she suffered from acute rheumatism, the attack having been repeated two years later. This second attack left her subject to dyspnœa. Four days before admission she was seized with sharp pain in the left side of the upper part of the abdomen, and later the pain extended down to the pelvis. Pleurisy was diagnosed and she was given opiates. The pain in the upper part of the abdomen disappeared, but that in the lower region continued. On the following day she vomited five or six times. An hour later, at 12 noon, she felt pain in both legs, which became cold and remained so until the following morning, when the pain in the right leg ceased and the limb regained its normal temperature. The left leg remained cold; the thigh was blue and the foot was pale and "shrivelled." Over the middle of the thigh the skin showed large blue blebs. On admission the pulse was 82 and the respiration 26; the temperature was not recorded. There was a double mitral murmur. Pulsation was absent in the left femoral artery. The left lower limb was undergoing dry gangrene up to four inches below Poupart's ligament, where there was a line of demarcation. It was decided to remove the embolus that was occluding the iliac artery. Nitrous oxide was given for 30 seconds and an incision was made downwards from an inch above Poupart's ligament parallel to the femoral artery. When the incision had extended through the skin and connective tissue the anæsthetic was stopped, and the dissection was continued until the femoral artery was exposed for a distance of two and a half inches. It was œdematous and easily separated from the neighbouring structures. Two provisional catgut ligatures were passed around it with an aneurysm needle, but were not tied. They were used to elevate the artery, which was incised in its long axis for one inch. The artery was completely thrombosed. With a delicate forceps a bifurcated clot one and a half inches long was drawn from below upwards. Then fresh arterial blood came from below, evidently from a collateral circulation through the profunda. A finger was then placed on the lower end of the artery inside the ligature loop so as to compress the vessel and stop the flow of blood. With the forceps Dr. Murphy began to extract the clot from the proximal side, but could not empty the artery. He then introduced a delicate spoon and withdrew more clot, but no blood flowed. Then he introduced a No. 6 soft catheter for a distance of seven and a half inches. He withdrew it filled with grumous blood débris, but no arterial blood followed. He reintroduced it, but could not force it through a resistant body at the end. He introduced a ureteral catheter; it met resistance at the same distance, but was forced through the thrombus and passed up for a distance of 19 inches, thus catheterising the abdominal aorta. A small quantity of arterial blood followed its withdrawal. A uterine sound was then introduced. It met with resistance at a distance of 7½ inches. It was forced half an inch farther and on its withdrawal much grumous thrombotic débris came away but no arterial blood. It was pushed a little farther and met firm resistance. No blood followed its withdrawal. It was introduced for a third time and with a little additional force at a distance of eight and a half inches seemed to pass into a free space. This was followed by an intense flow of embolic débris and fresh bright blood like that from a normal femoral artery. The finger was then inserted into the proximal ligature loop to stop the bleeding. With a fine silk suture on a curved conjunctival needle rapid continuous suture of the arterial incision was performed. On removing the digital pressure there was a little oozing between the second and third stitches. Two additional stitches stopped this. Pulsation could be felt throughout the femoral artery. After removal to bed the patient complained of pain in the toes and ankle, the first sensation in these parts after the embolism. The circulation became established below the line of demarcation. Amputation was performed four days later four inches below the line of bleb formation and the flap survived. The trunk of the femoral artery was found occluded by a loose non-adherent clot. Considering the success with which the clot was removed from the common iliac artery it is unfortunate that the operation was not performed until four days after the embolus was arrested at the bifurcation of the abdominal aorta.

THE PUBLICATIONS OF THE RESEARCH DEFENCE SOCIETY.

IN THE LANCET of July 3rd we printed a report of the annual meeting of the Research Defence Society, and that report shows clearly the large amount of work which is being done in teaching the public what are the real aims and methods of physiologists in making experiments on animals. One of the most valuable of the means adopted by the society to educate the unlearned in physiology has been the publication of pamphlets on various aspects of the subject, and we have received four of these pamphlets which have been recently issued. The first is on the need for the use of dogs in scientific experiments, and it is written by Professor E. H. Starling. The dog has been recognised as the friend of man for many centuries, and the affection subsisting between dogs and their owners is very great; it is therefore not surprising that a feeling should exist that it is desirable that some other animal less closely associated with man should be employed for experimental purposes, and attempts have been made to render it illegal to experiment on a dog under the Vivisection Act. Professor Starling in the pamphlet mentioned points out the reasons why the dog is indispensable for scientific purposes. It is only in academic laboratories that research can go on, for there only do we find the men the main object of whose life is the advance of science, and who are stimulated in their researches by the necessity of continually teaching the main truths of science, and in such institutions only is it possible to obtain the assistance of the brighter students as co-workers and to train them as future leaders in science. If therefore the investigations carried out in these scientific institutions involve the use of animals for experiment, the animals must be such as can be kept in a healthy and normal condition either in the laboratory itself or in buildings in close proximity, limited in their area and the nature of their surroundings by the fact that in most cases they have to be placed in the middle of populous centres. In isolated experiments it may be possible to employ the ordinary animals of a farm, such as bullocks, sheep, pigs, and goats, but they are not available for ordinary physiological and pathological investigations. Professor Starling emphasises the fact that no real distinction can be drawn between purely utilitarian and purely scientific experiments. The fact elicited by a scientific experiment to-day may be the starting point of most important utilitarian methods to-morrow. If animals are required for experiment, they must be such as can be kept in health and comfort within the limits of the laboratory. The only animals available are the frog, mouse, rat, guinea-pig, rabbit, dog, cat, and monkey. The frog is chiefly of value because, being a cold-blooded animal, its tissues survive a long time after removal from the body. The guinea-pig, rat, and mouse are of chief value for inoculation when large numbers of experiments have to be made; for instance, in the rooms of the Imperial Cancer Research Fund some 10,000 mice are kept. The rabbit is of great service, but its digestive system is very different from that of man, and for this and other reasons its physiological value is not so great. The monkey is invaluable for investigations on the brain and central nervous system, for in this respect it is closely allied to man, but for this very reason physiologists are loath to use it for experiments where animals lower in the scale will suffice. The organs of the cat are too small to permit of much experimental interference, and the dog therefore is the only animal whose omnivorous diet closely resembles that of man, whose general conditions of life allow it to remain healthy in a laboratory, and whose organs are of a size convenient for experiment. Professor Starling quotes many series of experiments which could only have been made on dogs, and points out the great results which have followed. He shows, moreover, that it is in the interest of nearly all the experiments that no pain should be felt by the animal, for pain would vitiate the results observed. Dr. A. Gardner Robb of Belfast has contributed a pamphlet on the value of antimeningitis serum in the treatment of epidemic cerebro-spinal meningitis. He makes it clear that by means of many experiments on the lower animals an antimeningitis serum was obtained from the horse. Before the use of the serum the mortality of epidemics varied from 69 to 80 per cent., with an average of about 75 per cent. After the use of the serum the mortality has been very much less, varying, he says, from 13 to 42 per cent. The improvement following the use of the serum is seen not only in the absolute mortality but also in the greatly reduced course run by the cases, and the number of serious complications and sequelæ has also been much diminished. It could in the first instance only have been obtained by experiments on animals, and the doubts with regard to its value may have to be tested by repetition of some of these. An important pamphlet is that on the anæsthetics used in experiments on animals. It is pointed out that more than 96 per cent. of all experiments on animals in this country are of the nature of inoculations and do not require any anæsthetic—in fact, they do not deserve to be called operations. All true operations on animals in this country are done under anæsthesia, and the pamphlet discusses the efficacy of morphia and chloral as anæsthetics or analgesics. By the replies of witnesses before the Royal Commission on Vivisection it is conclusively shown that each of these drugs can abolish absolutely all pain if the drug is given in a sufficiently large dose. The fourth pamphlet is a reprint of an article on the advance in knowledge of cancer by Dr. E. F. Bashford, Director of the Laboratories of the Imperial Cancer Research Fund. It demonstrates clearly that our exact knowledge of the conditions in which malignant disease appears dates only from the commencement of experimentation on animals. We have quoted enough to show that in issuing these pamphlets the Research Defence Society is doing good work, for they will show to all unprejudiced readers that physiologists and pathologists do not torture animals, and that though they insist upon the need for experiments on animals they do their best to mitigate any sufferings of the animals, and that in the vast majority of cases there is no suffering at all.

ACUTE INSUFFICIENCY OF THE SUPRARENALS.

IN an interesting paper published in the sixth number of *Contributions from the William Pepper Laboratory of Clinical Medicine* of the University of Pennsylvania, Dr. R. S. Lavenson records a case showing a group of symptoms due to acute insufficiency of the suprarenals, and points out that this condition, which is regarded as of considerable importance by French clinicians, has been but little studied in other countries. The patient was a widow, aged 44 years, and a native of Ireland. For two years she had been subject to occasional attacks of abdominal pain with vomiting, and during that time she had lost slightly in weight. One morning, shortly after breakfast, having been previously in comparatively good health, she had an attack of vomiting with some epigastric pain. This pain became more severe and vomiting was more frequent. Towards the evening she became slightly delirious and was admitted to the University Hospital under Dr. Stengel. The vomiting had ceased on admission, the temperature was 95° F., the respirations were 48, while the pulse could not be felt. The patient complained of epigastric pain and there was tenderness in this region and in the loins. On physical examination, apart from this tenderness and slight rigidity of the abdominal wall, there was little to be discovered. During the early part of the next day the breathing became of Cheyne-Stokes type. Under vigorous stimulation the patient reacted slightly, her temperature rose to 100° at noon, but her pulse was never palpable, and she died at 8 o'clock in the evening—i.e., about 36 hours after the onset of the symptoms. At the necropsy there were found to be chronic interstitial nephritis, chronic fibrous myocarditis, chronic catarrhal gastritis, fatty degeneration of the liver, with commencing periportal cirrhosis. There was also chronic pancreatitis, with acute interlobar suppurative changes. Both suprarenal veins were thrombosed and the suprarenals were in a condition of acute hæmorrhagic necrosis. Cultures made from the pancreas showed staphylococci, colon bacilli, and a bacillus positive to Gram which was not identified. Those made from the suprarenals were negative. The interpretation suggested by Dr. Lavenson is that the patient had probably suffered from the chronic pancreatitis for some years, and that a recent acute suppurative inflammation had been engrafted on this, leading to thrombosis of the adjacent suprarenal veins. Dr. Lavenson also gives an interesting summary of the etiology and pathology of the condition, with references to the recorded cases. With two exceptions all the cases have been associated with suprarenal hæmorrhage or with so-called adrenalitis, the latter being generally a necrotic rather than an inflammatory process. The two exceptions are a case of Janowski, in which the suprarenals formed small abscesses above the kidneys, and one recorded by Stursberg, in which suppuration was found in both suprarenals of a woman suffering from Pott's disease. The peculiar blood-supply of these glands derived from three sources—viz., the aorta, the renal artery, and the arteries of the diaphragm, the capillaries and venules uniting to form a single vein—has suggested that simple alterations in the blood-supply or the blood pressure may be determining factors in the production of hæmorrhage into the glands, and this explanation has been put forward in regard to the suprarenal hæmorrhage so frequently observed in the newly born. Chronic heart disease and pulmonary disease leading to chronic venous congestion have both been regarded as causes of suprarenal hæmorrhage. Similarly, it has occurred after conditions leading to a great increase in blood pressure—e.g., after repeated epileptic fits. The tendency to hæmorrhage in asphyxia has caused it to be regarded as a possible factor, especially in the newly born. In some cases organisms have been isolated from the suprarenals, and experimentally hæmorrhagic and destructive lesions have been produced in animals by bacterial and other poisons. The condition has also been noted in connexion with purpura, surface traumata, and with burns. A few cases have occurred in association with suppurative changes in adjacent organs as in the one shown by Dr. Lavenson himself. Clinically the following classification is suggested: first, cases with sudden onset and epigastric pain and tenderness followed by abdominal distension and death within a few days. The resemblance between this type and cases of acute hæmorrhagic pancreatitis is obvious. Secondly, an asthenic type, associated with a profound asthenia ending in death within a few days. Thirdly, a nervous type, with convulsions, coma, delirium, or the occurrence of a typhoid state. Fourthly, cases of sudden death; pathologically these are usually found to be due to hæmorrhage. Fifthly, cases with a purpuric eruption or with hæmorrhages into the abdominal viscera. Some of the cases present symptoms of more than one of these groups. A tumour from the hæmorrhage into the suprarenal has been felt in a few cases, and the *ligne blanche* of Sergent is described as being of diagnostic value; it consists of a white line produced by stroking the skin with the finger, but other observers agree that it is to be found in other conditions associated with vaso-motor relaxation. Dr. Lavenson's paper affords within short compass an interesting study of this condition, and since it presents certain facts in regard to suprarenal disease in a somewhat new light should serve to draw attention to the possibility of this explanation in some obscure cases of death from acute abdominal disease.

THE TINNING OF METALS.

IN 1908 the Home Office issued certain draft regulations which it was proposed should apply to factories in which the process of coating metal articles with a mixture of tin and lead or lead alone is carried on. In consequence of receiving from the traders concerned a considerable number of objections in regard to these regulations the Secretary of State ordered an inquiry to be held, and Mr. Edward Thornton Hill Lawes, barrister-at-law, was appointed a commissioner for the purpose. His report has just been issued, based upon a vigorous attempt to reach the truth and to solve the problems involved. Previous reports referred chiefly to the question of the operatives keeping themselves in a state of cleanliness, while certain experiments showed that lead chloride was present in the fumes given off from the tinned article, and conclusions were drawn to the effect that the danger of the process was largely due to this fact. Mr. Lawes, while not accepting that poisoning is entirely due to the fumes, admits that the effects of the metallic lead dust and unwashed hands must now be regarded as inconsiderable, compared with the danger of inhaling fumes containing lead chloride whether in the form of vapour or dust, as lead chloride is very soluble in the human system. The draft regulations were intended only to apply to the process of common tinning in which lead is used, and therefore the making of tin plates—iron plates coated with tin—and pure tinning were exempted. The making of "terne" plates, which includes the use of lead, was also exempted because the special process adopted involved no harm. It would appear that in the common tinning process lead cannot be dispensed with, but there is reason for believing that by the adoption of an efficient draught near the scene of the operation the risk of lead-poisoning is reduced to a minimum. Other simple measures, as, for example, the use of soap and a nailbrush and a protective apron by the employed, are enjoined in order to guard against poisoning by actual contact with the metal or metallic dust.

THE LEAGUE OF MERCY.

MORE than a thousand guests were present at the garden party which was given by the Prince and Princess of Wales to the members of the League of Mercy at Marlborough House on July 7th. Preceding the reception in the garden some 140 of the presidents and lady presidents of the League met, under the presidency of the Prince of Wales, in Marlborough House, when a report of the work of the League during the past year was read by Mr. J. Harrison, M.V.O. His Royal Highness in his address said: "The progress of the League of Mercy, as measured by the amount handed over to the King's Hospital Fund, with contributions made to hospitals in the home counties, and the numbers engaged in the work of the League, has during the past year shown no sign of decrease. Last year £19,000 were given to the King's Fund, as against £1000 in the first year of our work, while £3495 were contributed to local hospitals outside the area of distribution of that Fund, being 50 per cent. more than in the previous year. The League is thus realising the intention with which it was inaugurated. It is familiarising the humbler citizens of London and the suburbs with the work of the hospitals, and securing in some measure their coöperation in the maintenance of these institutions." Subsequently the Prince and Princess, with Princess Mary and Prince Henry and Prince George, entered the grounds of Marlborough House, where the honorary secretaries of the League, Lord Wolverton, Sir William J. Collins, M.P., and Mr. Harrison, presented to their Royal Highnesses the ladies and gentlemen who had been awarded the Order of Mercy.

THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

IN view of the nearness of the long vacation the day schools sub-committee presented to the London Education Committee on July 14th a preliminary report showing what has been done in the direction of enlisting the aid of the hospitals for the medical treatment of school children in the metropolis. The medical officer for education estimates that 43,746 children out of 740,728 are suffering from affections of the eyes, ears, and skin. 39 hospitals have replied to the inquiries of the Council; six have not expressed any desire to coöperate; four hospitals for children and six others desire to help as far as existing rules permit; six hospitals have specifically stated that they can take additional cases. All these decline payment, whilst 16 hospitals are prepared to accept a money payment in one form or another. The replies also indicate that the hospitals would be opposed to any interference by the Council in the management of the institutions, and there is a general feeling that the Council should not ask for any special privileges for the children, although some of the hospitals have expressed their willingness to afford such facilities. The Education Committee decided to recommend the Council to accept the free offers of the Central London Ophthalmic Hospital, the London Hospital, the Paddington Green Children's Hospital, the Queen's Hospital for Children (Hackney-road), the Royal Westminster Ophthalmic Hospital, and the Victoria Hospital for Children; and to enter into negotiations with the authorities of other hospitals to provide treatment in the out-patients' department for a payment not exceeding £50 a year for each additional medical assistant (working one-half day a week) needed for the treatment of the children, together with a sum of 2*s.* for each child so treated, to cover the other expenses incurred by the hospitals.

GUY'S HOSPITAL MEDICAL SCHOOL.

ONE of the most interesting of the annual functions connected with the London medical schools is the summer distribution of prizes followed by a garden party in the grounds of Guy's Hospital. This year the event took place on July 8th and its success was as great as any of its predecessors. The prizes were presented by the Duke of Devonshire in the Physiological Theatre, where Mr. Cosmo Bonsor, treasurer of the hospital, occupied the chair. The Dean in his report was able to give a satisfactory account of the school work during the past year, and he included in his remarks a statement that must have been no less satisfactory to the medical part of his audience and to the parents present whose sons will shortly be dependent on medicine for a livelihood. The Dean said: "It is interesting to note that this period of depression in the medical profession seems passing away, and there is no doubt that at the present time the demand for qualified men far exceeds the supply. Applications are being daily received from provincial hospitals unable to get the medical officers they require, and the income that can be made by the recently qualified man is certainly much higher than it was a few years ago. In the circumstances, therefore, it seems desirable to point out to the public that the profession of medicine holds out at the present time better prospects than it has for some years past, and that an income can be made in its ranks which compares favourably with that to be made in many other professional careers." The Dean concluded his remarks with a plea for further endowment of medical education, which was endorsed by the Duke of Devonshire's subsequent speech. After the prizes had been presented, the company joined those who had been unable to gain admission to the crowded theatre in the grounds, where a good band and a fortunate sun rendered the garden party a very pleasant affair, enlivened as it was by the presence of many lady visitors and a display of academic costume.

DR. William Stirling, professor of physiology, Dean of the Medical Faculty, and pro-Vice-Chancellor of the University of Manchester, has been nominated the delegate to represent the University of Manchester at the quincentenary of the University of Leipsic, which will be celebrated from July 28th to 31st.

THE Lord Lieutenant for the county of Bedford has signed the commission of Surgeon-Lieutenant-Colonel Rowland Hill Coombs, M.D., 3rd Battalion the Bedfordshire Regiment (Special Reserve), to be his Deputy Lieutenant.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 2 cases of plague with 1 death were reported during the week ending July 8th.

GUY'S HOSPITAL DENTAL SCHOLARSHIP.—Mr. F. N. Doubleday, L.D.S. R.C.S. Eng., has been awarded the Guy's Hospital Travelling Scholarship of £100.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the General Committee of the Imperial Cancer Research Fund was held on Friday, July 9th, at Marlborough House, H.R.H. the PRINCE OF WALES, President, being in the chair.

Amongst those present were the Knight of Kerry (Vice-President), Sir William S. Church, Sir R. Douglas Powell, Sir Henry Morris (honorary treasurer), Sir John Tweedy, Sir Charles Morison-Bell, Mr. H. T. Butlin (President of the Royal College of Surgeons of England), Mr. Gerard Fiennes, Mr. Henry L. Florence, Mr. Robert Littlejohn, Sir Henry G. Howse, Mr. L. Neumann, Dr. J. Rose Bradford, Sir John McFadyean, Dr. T. T. Whipham, Dr. Arthur Newsholme, *Mr. Edmund Owen, Dr. F. W. Andrewes, Dr. J. F. W.* Tatham, Dr. E. F. Bashford (general superintendent and director of the [illegible] Dr. M. Haaland, and Mr. [illegible]

Letters express [illegible] were read from Mr. A [illegible] Waldorf Astor, and Sir Julius Wernher (Vice-Presidents); from the Duchess of Bedford, Lord Rothschild, Sir Thomas and Lady Glen-Coats, and others.

SEVENTH ANNUAL REPORT.

Report of Executive Committee.

During the past yea[illegible] the authorities of the [illegible] Berlin, in which it has [illegible] should reconsider the [illegible] International Society, [illegible] gress should be held [illegible] opinion that the decis[illegible]

[illegible] extent to which the [illegible]

and is beyond the reach of many [illegible] Fund, would be debarred from [illegible] research. Recognising that such [illegible] it has been the aim of the general [illegible]

[illegible] superintendent. It has been found impossible to concede all the requests, but the following gen[illegible] to pursue their researches in [illegible]

country. [illegible]

Report of the General Superintendent.

Dr. Bashford's report commenced with a reference to the annual report of the previous year, [illegible] went on as follows:—Exper[illegible] conclusion deducible from [illegible] chief dangers of cancer lie [illegible]

[illegible] lignant new growths of the [illegible] with our experience in man, [illegible] apply the results obtained by [illegible]

[illegible] its statistical importance was emphasised, but also the relation that [illegible] ancer in mice of known [illegible] s frequent occurrence of [illegible] als, and, by analogy, in [illegible] As is well known, crude [illegible] cancer occurring in the stocks of breeders of mice and rats have been held by many writers to [illegible]

[illegible] constant [illegible]

[illegible] correspond closely with the biological characters, and in particular we [illegible]

[illegible] killed or disintegrated in any way such as by chemical poisons or [illegible]

[illegible] in this respect between normal [illegible]

[illegible] hese respects [illegible] action upon [illegible] 1905 in the [illegible] the existence [illegible] disseminate [illegible]

[illegible] animals during the processes of successful grafting, immunity, and spontaneous healing respectively. While corroborating the general results already published—viz., that the specific connective tissue and vascular scaffolding supplied by a normal is not supplied by an immune animal—they show that the entire connective-tissue system of the animal responds during the processes both of spontaneous healing and of immunisation. The consequence is that any subsequent inoculation fails to elicit the response necessary for continued growth. It is not intended to deny that changes in the blood plasma accompany the acquirement [illegible] it is difficult to conceive of [illegible] ing without this intervention [illegible] the connective tissues pro [illegible] e not solely responsible, and [illegible] moral nature but to a large [illegible] forded of the negative results [illegible] to obtain an anti-cancerous serum.

From the general hospitals of England and Scotland details of 13,000 cases of cancer which have been submitted to microscopical examination have been collected. For the present the collection of clinical and pathological data from these sources has been suspended, as it is considered that the number already obtained promised to afford as satisfactory results as would an even larger number. This line of enquiry was embarked upon because of its critical bearings upon the interpretation and pathological value of the data on which the national mortality statistics are necessarily based. The wisdom of the conclusion arrived at in 1902 not to undertake a cancer census in the British Empire on the lines of that made in Germany on Oct. 15th, 1900, has been justified not only by our own later experience but also by the fact that since that date most other countries have recognised its futility. Incidentally the collection of clinical and pathological data from hospitals has demonstrated that the taking of a census of cancer patients in the general population, as advocated and practised abroad, is an absolutely worthless tabulation of data vitiated by an exaggeration of all the fallacies inseparable from data of mortality. In a recently published circular the French Association for the Investigation of Cancer expresses its determination not to undertake one of these "extensive and futile cancer censuses" for the same reasons as influenced the Imperial Cancer Research Fund in 1902. An improvement in the value of the statistical investigations of cancer is only to be expected from an improvement in mortality statistics as a [illegible] e data. The necessity for [illegible] of mortality applies still [illegible] between the statistics of [illegible]

Comparisons between different countries will only be made profitable by an all-round raising of the standards of accuracy and completeness of the mortality statistics as a whole with which those of cancer are inseparably bound up. The willingness with which Dr. Tatham has placed the resources of the General Register Office at the disposal of the Imperial Cancer Research Fund with a view to promoting the attainment of greater utility, accuracy, and completeness of statistics of cancer for England and Wales, deserves to be placed on record. The collaboration of a National Statistical Office has not been vouchsafed to the same extent to similar enquiries out of England and Wales.

The collection of data from outlying parts of the Empire has been continued, particular attention having been directed again to the importance of seeking for peculiar forms of chronic irritation associated with the occurrence of malignant new growths in native races. In this connexion a new and most interesting observation has been reported from Eygpt—viz., the occurrence of cancer of the skin of the chest on the triangular area of skin left bare by the clothing worn by the Felaheen.

Reviewing the results of seven years' work on the comparative and experimental investigation of cancer, one is struck by the difference between the nature of the problems before us seven years ago, and of those now being considered, as well as by the freedom one feels in investigating the problems presented to-day, without the incubus of having to consider them from the standpoints of the many hypotheses now proved to be untenable. I do not think that too much is claimed by asserting that the arduous labour of the past seven years is gradually effecting, and in several respects has actually effected, a complete [illegible] ancer problem. But it has done [illegible] biology. Seven years ago no one [illegible] kept growing for a period four tir [illegible] animal. But to-day the number of [illegible] propagated separately, make it theoretically possible that the majority of the tissues may be so grown and segregated. In other words, a living animal can be analysed into many of its living component tissues. The finer relations of various kinds of tissues to one another have been revealed by the application of the new methods. The biological alterations which living mammalian cells may undergo suddenly, as well as gradually, under the influence of experimental conditions, can now be studied. These and many other achievements in the field of general biology are the most important practical fruits which have accrued from the experimental study of cancer, upon which they have only indirect bearings. Ultimately they are bound to be of far-reaching general [illegible] y they are merely the weapons tha [illegible] Their further development and [illegible] purely biological problems will probably precede the solution of many of the problems surrounding the nature and causes of cancer.

While some chance opportunity may yield results of immediate practical moment, the outlook on therapeutics in the meantime is in the direction of preventing dissemination or metastasis. The means of explaining why inoculated cancer can undergo spontaneous cure have been greatly enriched by the acquisition of fresh strains of propagable tumours behaving in a variety of ways in this respect, and presenting all gradations from some growing progressively in every animal inoculated, to others which, while developing for a time in every animal, are ultimately got rid of in all cases by the active resistance which the tumours induce against themselves.

The development of the investigations in [illegible] with their increasing requirements has been [illegible] a parallel extension of the laboratory accomm [illegible] Royal [illegible] only w [illegible] the lat [illegible] isposal of the Im [illegible] expansion of the laboratory accommodation, without which it would have been impossible for the investigations to have acquired their present manifold and extensive character. During the first year of active work the staff consisted of the Director and one colleague. To-day there are four official assistants to the Director, six voluntary scientific workers in the laboratory, and a staff of 14 other laboratory assistants. The investigations have grown to an extent which fully occupies the entire accommodation in the present premises. The future of the investigations depends not only upon whether the Royal Colleges can continue to support them on the same generous scale as heretofore, but also upon whether they can provide for the exigencies of future development.

Report of the Honorary Treasurer for the Year Ending June 24th, 1909.

It is my unpleasant duty to report that since 1903 no less a sum than £9915 14s. 1d. has been taken out of capital account in order to meet the recurrin [illegible] nses and receipts.

In spite of [illegible] d, due to the munificent gift of Mrs. [illegible] I regret to say that the expenditure during the financial year just ended exceeds the revenue from investments by £2194 12s. 6d. The Fund commenced the year with a balance of £656 10s. 6d. in hand on current account, but it finished with an overdraft of £744 15s. 6d. The deficit is chiefly attributable to the great cost of publishing the last scientific report, which in size is greatly in excess of any previous report and contains a considerable number of elaborate and valuable illustrations.

The total outlay in issuing this scientific work amounts to £1510 8s. 8d., of which £1071 6s. 1d. is charged to this year's account. There has also been a considerable increase in the amount of research work carried on in the laboratories throughout the last year as compared with all former years, except the latter part of the year 1907-08. This was rendered possible by the additional workrooms and other space accommodation which the two Royal Colleges gratuitously put at the disposal of the Fund. More scientific workers have thus been provided for; and the payments made to them and the increases in the salaries of certain of the original subordinate officials, whose experience in the laboratories has rendered their services increasingly valuable, have led to an increase of £265 11s. 10d. in the salaries and wages of those engaged in the laboratories. Besides the large increase in the scientific report account, and the increase just referred to in salaries and wages, the only other items of expenditure which show increases are printing and postage, on which there is an excess over last year of £14 5s. 7d., and miscellaneous office expenses, in which there is the slight increase of £4 11s. 4d. In other items of expenditure considerable decreases appear.

It is a regrettable coincidence that in a year when a very large additional expense has been incurred in the publication of the latest scientific report the amount received by the Fund in donations and legacies has fallen lower than in any previous year. The total sum contributed to the Fund throughout the whole year is only £781 5s. 6d., showing a depth of material indifference on the part of the public to which the worst of the preceding years had not even approximately descended.

Thanks, however, are due to several very constant and continuing supporters, as will be seen at a glance on looking to the list of contributions for the year. In this list will be found the names of several good friends to the Fund who have subscribed, even to their seventh or eighth contributions; whilst the Worshipful Company of Carpenters have doubled the amount of their annual subscription.

Unless a substantial sum is shortly forthcoming in the way of legacies or donations it will be necessary for the trustees to realise at least £1000 to cover the overdraft.

Moreover, owing to the change in the ownership of the Examination Hall where the research work at the present time is still being carried on, it will very soon be requisite to obtain new premises and to build new laboratories. Hitherto, not a penny has been spent on building or equipment—thanks to the munificent generosity of the two Royal Colleges.

What the disposition of the Colleges towards the Fund, by way of their continuing to find adequate working quarters, may be, it is not possible for me to predict; but, seeing that the Colleges will themselves have to make very large outlays of money in building a new Examination Hall, the Imperial Cancer Research Fund must be prepared to provide a new home for itself in the immediate future.

Sir **WILLIAM CHURCH** moved the adoption of the report. He said: At the last annual meeting of the Fund the third scientific report was in course of preparation and continued to occupy much of the time of the staff until shortly before its publication in October last. This year it is not the intention of the committee to publish any scientific report; the work through the year has been mainly a development of the investigations recorded in our last report and as yet is not sufficiently complete for publication. The experimental work which has taken place during the past year confirms the opinion expressed some years ago that the course of cancer as it can be observed in the laboratory agrees with that which occurs in man, and forms a sound foundation for studying the disease as it is met with in the human species. As it has already been amply demonstrated that all malignant growths of the mamma occurring in mice can be experimentally propagated in other mice, only those instances of the disease which presented special features differing from those which had been transplanted in former years were propagated. Such growths numbered 28 out of 107 which were met with in the course of the year, being in all instances cases of spontaneous cancer. The breeding experiments from mice derived from cancerous stocks have been continued, but the numbers are as yet insufficient to render a detailed analysis of the figures useful for the comparison of the frequency of cancer in mice with a cancerous ancestry with the frequency of cancer in mice generally.

One of the carcinomatous tumours propagated during the past year has thrown light on the connexion between implanted carcinoma and the development of sarcoma in the tissues of the host. In this particular instance the development of sarcoma follows almost constantly upon successful inoculation, and the determining factor appears to be the duration of the active growth which takes place in the cells of the implanted carcinoma—the longer they grow the greater the tendency to sarcomatous changes in the tissues of the host. At the present time 60 mammary carcinomata are being propagated and in none can it be said that any one tumour is an exact counterpart of another. Thus we see that from the epithelial cells of one and the same organ a number of distinct forms of malignant new growths may arise and main- [illegible] ted. Again, whilst [illegible] he tumours of any [illegible] tions in structure and biological behaviour. Furthermore, the variations in histological character do not appear to be necessarily *accompanied by corresponding differences in malignancy.* Further investigations have been carried out for the purpose of discovering the manner in which animals can be rendered resistant or immune to inoculation with cancer. It has in former years been shown that this can be effected by the implantation either of normal or cancerous tissues. The later experiments have shown that if the cells introduced into the animal have had their vitality destroyed either by chemical or physical agency they are deprived of their immunising power. The action of radium on normal and cancerous cells produces a similar effect, for it is found that exposure to the emanations of radium, though for a time which is insufficient to cause any *discoverable alteration in the structure* of the cells, yet deprives them of the power of conferring resistance or immunity against inoculation by cancerous tissue. The similar action which radium has on both normal and cancerous tissue supports the opinion already expressed in 1905 that radium has no selective action on cancerous cells. All attempts to obtain an anti-cancerous serum have hitherto been unattended with success, and experiments have been made, and are still being continued, to determine, if it be possible, to separate from the cancer cells immunising powers apart from their continued growth and capability for propagation. Large numbers of mice suffering from spontaneous cancer as well as from inoculated growths have been treated by the implantation of normal or cancerous living tissues, but it is, as yet, premature to draw any conclusions as to the effect of such implantation either in conferring resistance to the growth of cancer, or in influencing its dissemination on recurrence after the removal of a cancerous tumour. It has been determined on the recommendation of the Statistical Committee to cease the collection of cases from the general hospitals of England and Scotland. 13,000 cases, which have been submitted to microscopical examination and pronounced to be cancerous, have been received, and this number is considered to be sufficient to afford data as satisfactory as would larger numbers for testing the value of "cancer censuses," and for estimating the correctness of the mortality of the disease as shown in the national mortality statistics. The collection of these cases has proved the importance of post-mortem investigation, and the difficulty which exists in the diagnosis of cancer. The collection of data from outlying portions of the Empire is being continued, and some new and interesting facts have been obtained. Reviewing the work done during the past seven years it is seen that the investigation into the nature and cause of the disease stands in a very different position now from what it did when the Fund was instituted. A large number of the hypotheses regarding the cause of cancer put before us then have been shown to be untenable, and the biological changes which living animal cells can undergo or give rise to, have been closely studied [illegible] out a fresh and hopeful field [illegible] the experimental study of ca[illegible] entailing considerable extra labour on our staff, to a large number of independent workers in cancer research both in this country and abroad. In the opinion of your committee it is by the free interchange of views and material between the independent workers in cancer research that definite results may be obtained rather than by holding formal conferences in which theories not infrequently play a more important part than facts. Until some general consensus of *opinion as to the cause and nature of* cancer has been arrived at by those who devote themselves to the research, it appears premature to hold a general conference on the question.

Sir HENRY MORRIS (honorary treasurer), in seconding the motion, said that the annual reports which had been presented were divided into two parts, the one dealing with the scientific results of the research, and the other dealing with the financial position, and it had been thought desirable, in drawing up the report this year, to draw special attention to one of those changes which came about through lapse of time, and which in this instance, was particularly regrettable, though unavoidable. He referred to the passing of the old Examination Hall, where the research work had been carried on since its initiation into new hands. It had been a great feature in favour of the Cancer Research Fund that not a single penny had been spent upon bricks and mortar or upon equipment, but he feared that the time would shortly arrive when it would be impossible to make a similar statement. Owing, however, to the fact that the Royal *Colleges had become tenants for the time being of a large* part of the Examination Hall, provision had been made for the continuance of the research work in the same quarters for the next three years. After that time it was not improbable that some demand might be made upon the capital of the Fund for the purpose of providing it with a new home. Whether that would be necessary or not he could not predict, but he felt quite sure that the subscribers and donors to the Fund might have confidence that, in the event of building becoming necessary, strict economy would be studied as well as efficiency.

The resolution was carried unanimously.

Mr. FIENNES next moved a vote of thanks to the chairman and members of the Executive Committee, the sub-committees, the honorary treasurer, and others who had assisted in the work of the Fund during the past year. He could imagine no body of gentlemen to whom the thanks of the public were more justly due. From the inception of the Fund it was evident to everyone who, with knowledge, *gave himself to the work*, that the *quest* would be long and arduous; that nature would not yield up one of her deepest and direst secrets without a prolonged struggle. It was evident also that the public, at first ardent in hope that the problem of the deadly scourge would be speedily solved, would, as year by year went by, grow forgetful, even despairing. Nevertheless, those whom he asked the meeting to thank had given their time and thought without measure and without price to a work apparently so priceless, and for that the deepest gratitude was due. The statement which had just been made—a statement full of hope and yet little calculated to attract those whose attention was continually caught by gaudy phantoms—was the measure *of the wisdom of those* who, *in the founding of the Fund*, insisted that it should be based on realised and realisable assets. The subscription list for the year showed, unfortunately, that public interest had waned; and, speaking as a layman, he would say that as soon as it was possible, without doing violence to the scientific conscience, it was important that results, even negative results, should be announced. The vote of thanks which he proposed included a number of the names best known in British medicine, and some of the most munificent of public benefactors. Without enumerating them all, perhaps he might be allowed to refer specifically to Sir Henry Morris, by whose recent advancement all who were connected with this movement felt themselves honoured. *Sir Henry Morris's claims on the gratitude of* mankind were not limited to his work in connexion with this Fund; but the record of unselfish toil which he had given to its organisation and development would ever stand as a memorial to him.

Mr. NEUMANN seconded the motion, which was unanimously agreed to.

Sir R. DOUGLAS POWELL proposed that *Professor G. Sims* Woodhead be re-elected a representative of the general committee on the Executive Committee, which was seconded by Dr. NEWSHOLME, and carried.

Mr. BUTLIN moved:

> That the Royal Colleges, having discontinued the appointment of a [illegible] College.

This was seconded by Dr. ROSE BRADFORD, and agreed to.

Sir JOHN TWEEDY, in moving a vote of thanks to the Prince of Wales for presiding, said that the leadership of His Royal Highness was of the greatest service to those who were working for the Fund and a source of particular encouragement to the medical and surgical experts who were engaged in this work and who were supervising it. Moreover, it was an assurance to the subscribers that the administration of the Fund was carried on with due regard to efficiency and economy. For more than 2000 years the best minds in the medical profession had been engaged in the study and investigation of cancer, but he had no hesitation in saying that more progress had been made in the last six or seven years—i.e., since the inception of the Fund—than in the previous 20 centuries. There was no disguising the fact that this recent progress was entirely the outcome of the experimental method, and it was in this respect he thought His Royal Highness's patronage and support was of such great service to the Fund and to the community. They could not close their eyes to the fact that there was a small but influential section of the community who disapproved altogether, and under any circumstances, of the experimental method. There was, however, a larger and a more enlightened portion of the community who were *willing that this experimental method should be continued* under the proper safeguards, not only of efficiency and skill, but of scrupulous considerations for humanity and refinement. It was in this respect that he thought His Royal Highness's distinguished support and headship of this fund was of such great service to the community. The goal at which they were aiming might be distant, but he was confident that they would only reach it by the experimental method. By any other method they not only made no real progress, but they walked merely in a circle.

Sir JOHN MCFADYEAN seconded the motion, and in doing so said he would like to associate himself with everything that had been said by Sir John Tweedy. It must be a source of satisfaction to His Royal Highness, as President of the Imperial Cancer Research Fund, to know that everything that was humanly possible was being done by Dr. Bashford and his able colleagues to throw light on the cause of a disease which was the occasion of so much human suffering as cancer; and as chairman during recent years of the Pathological Subcommittee of the Fund he wished to corroborate what had been said both by Sir William Church and Sir John Tweedy as to the considerable progress that had already been made towards the final objects of the Fund. No one who was acquainted with the scientific reports which had already been published could doubt that for a moment. In the first place, a number of erroneous theories, which were positively harmful because they were directing the research into fruitless channels, had been entirely swept away; and, in the second place, new facts of the greatest pathological interest had already been discovered. It was quite true that the cause of cancer and the means of preventing or of curing it had not been discovered, but even with regard to these points there was, he thought, no occasion to despair. At any rate, the interest which His Royal Highness was pleased to take in the Imperial Cancer Research Fund was a constant encouragement to those who had to plan and to carry out the work for which the Fund made itself responsible.

The motion was passed with acclamation.

The PRINCE OF WALES in reply said:—

Gentlemen,—I sincerely thank you for the cordial manner in which you have supported the vote of thanks so kindly proposed and seconded by Sir John Tweedy and Sir John McFadyean. Last year circumstances prevented me from attending at our annual meeting, so I am glad to be able to meet you here to-day, and, after listening to Sir William Church's remarks, I think we may congratulate ourselves upon the results of the work of the Fund in the past year. In the report of the executive committee reference is made to a petition which was presented by the International Association for Cancer Research in Berlin to His Majesty the King, during his visit to Germany. The correspondence which has taken place, and all the proceedings of the executive committee on this subject, were submitted to me, and I wish now to say that I gave my approval to the decision of the executive committee, feeling convinced that the methods adopted by the Imperial Cancer Research Fund, of freely distributing their material to workers in every country, *of permitting anyone with satisfactory credentials* to study our methods in our laboratories, and of encouraging international collaboration amongst the workers in the various cancer laboratories are the wisest and most efficient means of advancing the study of cancer. This policy of active laboratory collaboration as distinct from conferences has been productive of much good work already, because, whilst the Fund has achieved a recognition of its position as a national and imperial institution, the scientific standing of the staff and the freedom with which it accords assistance to foreign laboratories and workers are rapidly establishing for it a position of international importance. When presiding over this committee on previous occasions I have expressed the view that immediate results in regard to the cure of cancer must not be counted upon, but that rather we must look forward to steady and consistent progress in accordance with the experience of all scientific investigation. There can be no doubt, however, that the seven years' work already accomplished by the Imperial Cancer Research Fund has brought about a complete change in the standpoints from which cancer should be studied. Many and varied lines of research are being pursued with the utmost perseverance, and every development, as it occurs, is followed up with the minutest care. During the past year an important work—the Third Scientific Report—has been issued from our laboratories and *has been received with high appreciation by all* those at home and abroad who are competent to express opinions on these highly technical researches. This, of itself, marks a steady and valuable advance, and one with which we have every reason to be satisfied. The number of applicants to work under the general superintendent, coming as they do from all parts of Europe, from the United States, as well as from Japan, is evidence of the high value which is attached to the work in our laboratories. The honorary treasurer calls attention to the fact that again the expenditure has exceeded the year's receipts, and that there is now an overdraft at the bank. Looking to the possible duration of these researches, the realisation of capital is to be deplored, but this will be unavoidable unless further assistance in the shape of annual subscriptions and donations is forthcoming. In conclusion, I offer my best thanks to the chairman and members of the different committees, and also to Dr. Bashford, our director, and his colleagues for the valued services rendered by them during the past year.

The proceedings then terminated.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 16th, 1831.

EXTRAORDINARY RECOVERY OF SIGHT.

THE following case is very singular:—Pêcheur, a serjeant in the Royal Guards, received so violent an injury on the left eye by a fall, that the globe of the eye was burst, and the crystalline lens, together with the aqueous and vitreous humours, were forcibly expelled. The palpebræ were ecchymosed, the conjunctiva was red and bloated, and the lower part of the cornea was separated from its attachment to the sclerotic by an irregular cut, through which a portion of the iris protruded. The parts were washed, the iris was carefully returned, the divided edges of the cornea were approximated, the eyelids were drawn close and retained so, and a quantity of blood was drawn from the temporal artery. Ice to the head, sinapisms to the feet, constant darkness, and a rigorous diet, were enjoined. During the night a second bleeding was practised, and the next day cupping-glasses were applied to the nape and between the shoulders. Baron Larrey considered this eye as lost, or at least for ever deprived of the faculty of sight; but, "*a notre très grande et agreable surprise*," the globe gradually refilled, on the 22d day the cornea began to assume a healing aspect, and in about six weeks it was perfectly cicatrized. The natural form and almost ordinary volume of the organ were restored, and by the aid of a very convex glass this soldier came to see objects distinctly, and continues to discharge all the duties of his office. "This very curious case evidently proves, that the vitreous humour, although in greater part lost, can be regenerated," and that the crystalline lens may be dispensed with!—*Med. Chir. Rev.*

THE TREATMENT OF SARCOMA BY BACTERIAL TOXINS.

A MEETING of the Surgical Section of the Royal Society of Medicine was held on July 13th, Mr. J. WARRINGTON HAWARD being in the chair, when Dr. W. B. COLEY (surgeon to the General Memorial Hospital, New York) delivered an *address on the Treatment of Sarcoma by Bacterial Toxins*, a treatment associated with his name. He said:—

Although I have been working constantly upon this line of investigation during the past 17 years, it has grown more interesting to me with each succeeding year, and while the results have not been as satisfactory as one who is seeking for perfection could wish, they have been sufficiently real and tangible, I think, to be entitled to more careful consideration than they have yet received. Furthermore, they may have an important bearing upon the whole cancer problem, since if by the administration of certain bacterial toxins we can cause the degeneration, death, and absorption of living tumour cells of one variety of cancer—sarcoma—it is not unreasonable to suppose that by the use of some other forms of bacterial toxins we may succeed in destroying or inhibiting the growth of the other and more common variety—carcinoma.

First, I wish to emphasise the point that the method rests upon a solid foundation of accepted and indisputable clinical facts—namely, that in a considerable number of cases of inoperable cancer of all varieties, and especially sarcoma, such tumours have been known to entirely disappear under attacks of accidental erysipelas, and patients have remained well for many years thereafter. For the benefit of those who refuse to accept clinical results unless confirmed by laboratory experiments these latter tests have now been supplied, since during the last two years, at the Huntington Cancer Research Fund, Dr. Martha Tracy and Dr. S. P. Beebe have shown that large multiple sarcomas in dogs rapidly disappear under local or systemic injections with the mixed toxins of erysipelas and bacillus prodigiosus. I have already collected 38 cases of malignant tumours, 17 sarcoma, 17 carcinoma, and four doubtful, in which an attack of erysipelas had occurred. In 23 cases the attack was accidental, and in 15 it was the result of inoculation. Of the 17 cases of carcinoma, three were permanently cured. One, a probable carcinoma, was well five years after the attack of erysipelas. The remaining 13 showed more or less temporary improvement. Of the 17 cases of sarcoma, seven were well from one to seven years afterwards. There was little change in preparation until Dr. Tracy's experiments at the Huntington Fund two years ago proved the truth of the opinion that I had already expressed some time before, based upon clinical observations alone, that the bacillus prodigiosus had in itself a curative effect upon tumours, independent of any action it might have in intensifying the virulence of the erysipelas. Dr. Tracy's [illegible] experiments with sarcoma in dogs showed that sarcomas would disappear under the injections with the bacillus prodigiosus alone, without any erysipelas, although not quite so rapidly as when the combined toxins were used. Utilising [illegible] been possible before—namely, a definite standardisation of dosage. This enabled us to overcome the greatest difficulty we had had to contend with all along. The first preparations which Dr. Tracy made in the way described had so large an amount of bacillus prodigiosus that very severe reactions were obtained by minute doses, and in one case, in the hands of another physician, death resulted within a few hours after [illegible] continued up to the present time.

The macroscopic as well as microscopical changes observed by myself and others have been precisely the same as those formerly noted in cases of sarcoma treated by inoculation of the living germs. First, the tumour becomes much paler, owing to decreased vascularity; secondly, it becomes much more moveable and less fixed to the surrounding tissues; thirdly, it soon begins to show areas of softening, due to [illegible] r elements; [illegible] by absorp- [illegible] the tumour tissue. In such cases incision and drainage are sometimes advisable, provided the tumours are in accessible regions. *These changes are precisely the same, whether the toxins have* been injected directly into the tumour or whether the injections have been made in remote parts of the body, proving that the action of the toxins is systemic rather than local. In a certain number of cases—in my own experience in a little over 10 per cent.—this degenerative process has gone on until complete absorption of the tumours had taken place and the patients have remained cured. In other cases improvement is only temporary, and in a very few instances, especially in cases of very large and vascular tumours, particularly in those of the melanotic type which of late pathologists are inclined to class as carcinoma, no marked beneficial effects have been noted. What is the explanation for these variable results?

The explanation is, I think, not so very difficult. My own belief, expressed 16 years ago and held more firmly with increasing clinical experience, is that all varieties of malignant tumours are of extrinsic or microbic origin. Just what type of organism this may be, whether bacterium, protozoon or spirochæta, or what not, is of little consequence. Assuming such origin, we have but to follow the analogy of other diseases of known germ origin. We know that in all such diseases there is a natural immunity and an acquired immunity. In the case of malignant tumours there is probably a natural immunity which is very great, but in certain cases it is absent or becomes lowered and the germ finds a favourable site and here starts the primary malignant tumour. The important rôle that trauma or injury plays in the development of malignant tumours can, *to my mind, be explained only on the theory of a* microbic origin. Assuming such an origin, the action of the toxins appears to me to produce certain changes in the blood of the sarcomatous patient which restore the weakened or lost immunity, or natural resisting power of the tissues, when the cancer cell, no longer finding conditions favourable for further growth and development, undergoes a process of degeneration or absorption. The reason why a cure results in some cases is, that in these the antagonistic action of the toxins is sufficient to destroy the cancer cell completely or render the soil unfavourable for further growth, whereas, in other cases, the tumour cells, by reason of greater vigour or better nourishment, are more resisting, and although receiving a temporary set-back by reason of the changes in the blood produced by the toxins, soon accommodate themselves to the new environment and continue to grow as before. The high temperature produced by the toxins may also be a factor in causing the improvement that follows their use. Many and repeated blood examinations of sarcomatous fractures treated with the toxins show almost universally a marked leucocytosis as a result of the treatment.

While in my earlier papers I have practically limited the use of the toxins to cases of inoperable sarcoma, further experience has convinced me that they have a much wider field of usefulness. I would at present advocate their use first in all cases of inoperable sarcoma, except the melanotic, which are classed as epithelial in origin by most pathologists; secondly, in cases of sarcoma originating in the long bones in which operation means a sacrifice of the limb (in these cases if no improvement is noted at the end of two or three weeks, I would then advise excision, resection, or amputation, according to the individual case); thirdly, in all cases of operation for primary sarcoma upon the healing of the wound (as a prophylactic against recurrence); and fourthly, after all operations for carcinoma. In the last instance the proceeding would greatly lessen the number of recurrences, an opinion which is based partly on the clinical observations of a considerable number of cases in which both epithelioma and carcinoma have entirely disappeared and have been permanently cured from attacks of accidental erysipelas. By far the greatest value of the toxins in my opinion lies in this use as a prophylactic measure. Used in this way, in much smaller doses than would be given in large inoperable tumours, they are practically free from risk. I have already a sufficient number of cases of sarcoma in which I have used the toxins as a prophylactic measure to justify such use. The use of the toxins as a prophylactic after operation I believe to offer by far the most important field of all, and one that is gradually being appreciated by the profession. At the Mount Sinai Hospital the toxins are now used in all inoperable cases of sarcoma as well as after operation for primary sarcoma. In carcinoma I believe the toxins, if used after operation, will prevent in a considerable number of cases recurrence that would otherwise take place. When used as a prophylactic measure in the way I have indicated, I believe the toxins to be entirely devoid of risk. There have been no deaths in the cases in which the treatment was used as a prophylactic. In these cases the dose given is smaller and it is not increased to the point of producing severe reactions; a moderate temperature of 99° to 101° is all that is required. This will not in any way interfere with the ordinary routine of life. The toxins can be given for long periods of time without any harmful effects, as is shown by a case of eight times recurrent sarcoma of the chest wall in which the treatment was continued for four years, and the patient is now well 14 years after the beginning of the treatment, or ten years after its cessation.

The facts I have set forth are sufficient in my judgment to justify the giving up of the traditional method of treating all cases of sarcoma of the long bones by immediate amputation. In most cases I believe it safe to wait for two to three weeks, the time required for a trial with the toxins, before sacrificing the limb. Cases of sarcoma of extremely rapid growth will probably show little or no effect from the toxins, and it will be natural to say that valuable time will be lost by the preliminary use of the toxins. However, it is my opinion that early operation in these cases is not of the slightest avail. On the other hand, in certain cases—probably a small number—the limb will be saved by the preliminary use of the toxins. In those in which early improvement is not marked operation can then be performed with even greater chances of ultimate success than had the toxins not been first used. The greatest value of the toxins in sarcoma of the long bones will, I believe, be shown to lie in a judicious combination with conservative operative treatment. By such procedure a hip-joint amputation, which has been the almost uniform rule for sarcoma of the femur, will give place to an amputation below the trochanter, a stump of sufficient length being left to permit the wearing of an artificial limb. The toxins will be administered for a considerable period of time after amputation with the hope of destroying the cells which were left behind and which, with operative treatment alone, cause the local and metastatic recurrences. The same rules apply to sarcoma of the humerus. In sarcoma of the tibia, fibula, and radius and ulna, particularly of the myeloid type, in place of amputation, as formerly advised and still advocated by the great majority of surgeons, we can safely substitute either curetting or partial resection, followed by a thorough course of the mixed toxins. While good results have been obtained in a very limited number of cases in this group by operation alone, I am convinced that that the number of successes will be greatly increased by combining the toxin treatment with conservative operation. Earlier diagnosis is steadily becoming the rule, owing to increased knowledge of the pathology, coupled with more correct interpretation of X-ray plates and the use of earlier exploratory operations; and conservative treatment along the lines I have mentioned will soon show results infinitely superior to those obtained by radical operations.

It is very hard to lay down any definite rules as to the duration of treatment such as would apply to all cases. My own feeling, based upon experience up to the present date, is that there is much more danger in stopping the toxins too soon than in administering them for too long. With four or five exceptions, cases in which the tumours have disappeared under the toxins have remained well. These few cases of recurrence furnished the most convincing evidence of the undoubted influence of the toxins in sarcoma, inasmuch as they absolutely prove that, in these cases at least, there could have been no error of diagnosis. Can we then form any practical rules to guide us as to how long the toxins should be administered? I would say give the toxins till the tumours have entirely disappeared and then continue in smaller doses and at longer intervals for three or four months longer. If no improvement is noted at the end of four or five weeks a successful result is not likely to occur and retardation of the growth is all that can be expected from a further use of the toxins. Much depends upon a judicious determination of the dosage for the given case. I always begin with one-fourth of a minim, diluted with sufficient boiled water to ensure accuracy of dosage, injected either into the buttocks or pectoral region. After the individual's susceptibility has been ascertained one can then inject into the tumour itself if it is in an accessible region. The initial dose into the tumour should always be less than, not more than one-fourth of, that used elsewhere. I believe it a good plan to give the injections alternately into the tumour and into the buttocks. Daily injections should be given, increasing by one-fourth of a minim until the desired reaction—namely, a temperature of 102° to 104°—has been obtained, unless the patient is in a weakened condition. Having secured this reaction, the dose should no longer be increased until it fails to give a reaction, when it can again be increased by one-fourth to half a minim.

The greatest obstacles to a fair trial of the toxins up to the present time have been: (1) the difficulty of obtaining a preparation of the toxins of uniform standard of strength and efficiency; (2) the published failures of a few men who have given the method a limited and most imperfect trial, usually with the preparation of the toxins entirely different from that used by myself; and (3) the limited number of cases of inoperable sarcoma seen by the ordinary physician or surgeon. Occasionally the physician has heard of the mixed toxins in such cases, but if he has read of the method he has probably forgotten the details and has little faith in its value. Now and then a surgeon is found who takes the time to give the matter special thought, and who is willing to give the patient the benefit of a trial with the toxins. He begins with some fears and more doubts, and when he sees the patient in one of the severe chills, sometimes with marked cyanosis, very rapid and feeble heart action, with a temperature of 103° to 105°, he hesitates to go on, or is unable to instil into the patient the courage and confidence so necessary to the continuation of the treatment to a successful termination. For these or other reasons injections are stopped and the treatment is pronounced a failure. While I have personally found the administration of the mixed toxins practically free from danger, there have been several fatal cases in the hands of other physicians brought to my notice which, taken together, show that there are certain risks connected with the treatment. If, however, the precautions which I have always carefully emphasised in former papers be observed, these risks, I believe, will be reduced to a minimum.

In my own experience, in nearly 500 cases, there have been only three deaths. In the majority of the fatal cases thus far observed death was apparently due to an embolism. This was the cause in two of my own cases and in both instances the general condition of the patients was extremely bad; there was generalisation of the disease and very marked involvement of the mediastinal glands. In both cases the patients had only very small doses of the toxins which were not pushed to the point of giving any marked reactions. Most of the deaths in the hands of other men have been due, I believe, to too large an initial dose given directly into a vascular primary growth. In recent years I no longer inject the initial dose directly into a tumour, but first test the individual susceptibility of the patient by systemic injections in the buttocks or pectoral region; after a few such injections local treatment may be begun, always starting with a minimum dose. I rarely give more than 1-6th cubic millimetre into the tumour in children, especially if situated in the neck or mediastinum, and never more than 1-4th cubic millimetre in adults. I have seen a temperature of 105° result from 1-5th cubic millimetre injected into a large cervical tumour in a child. In one of the fatal cases in the hands of other men, death resulted from an injection of 1-4th cubic millimetre of Dr. Tracy's early preparation (twice as strong as at present) directly into a mediastinal tumour. This was an elderly woman of very feeble vitality. Another case, recently brought to my notice by the physician in charge, contains an important lesson—i.e., that the toxins should never be administered by any physician who is not willing to give sufficient time—I will not say to read thoroughly all of the literature connected with the treatment, but at least the directions upon the bottle. In this case the initial dose was five cubic millimetres injected into a vascular tumour. The physician stated that he had turned the case over to his assistant who gave him five cubic millimetres and the patient died in 15 minutes. Death might also have resulted had he given him 20 grains of morphine, though perhaps not so quickly. The toxins are indeed, like strychnine and morphine, safe if judiciously and intelligently administered, but exceedingly dangerous if given in the way described.

I have known of another instance, a case of sarcoma of the lower jaw, in which, after two operations had been performed and it was not thought that the disease had been entirely removed, the toxins were advised immediately after operation. In this case also the treatment was turned over to an assistant. Although never within the last 15 years have the directions sent out with the toxins called for larger initial doses than a quarter or half of a cubic millimetre, the assistant in this instance proceeded to give 20 cubic millimetres as a first dose. This was some years ago when the preparation was considerably weaker than at present, or at least when its strength was more variable. Although the patient went into coma and remained comatose and delirious for some time, he finally recovered and is well now, two years afterwards, the tumour of the jaw having been cured.

In a few other cases, however, in which death resulted the ordinary precautions had apparently been carried out. One such case was seen by myself in consultation and the treatment advised and a general outline of the dosage given. This was a woman, 55 years of age, with a very large vascular sarcoma of the ilium. Her general vitality was much impaired and the circulation was not good. The toxins were begun in minute doses, 1-4th cubic millimetre, and gradually increased up to the point of reaching a temperature of 103° to 104°. After about two weeks' treatment an injection of 12 cubic millimetres caused a severe chill, the patient became very weak and exhausted, and did not recover. In this case, had I had personal charge of it, I have no doubt that, seeing that she did not bear the toxins well and that *the temperature remained high*, I should not have increased the dose as rapidly as was done. It is natural that any new method of treatment of disease should stand a certain definite test before it can hope to secure recognition. When it comes to the consideration of a new method of treatment for malignant tumours we must not wonder that a profession, with memories overburdened with a thousand-and-one much vaunted remedies that have been tried and failed, takes little interest in any new method and shows less inclination to examine into its merits. Cold indifference is all it can expect, and rightly, too, until it has something beside novelty to offer in its favour. 16 years ago, when I began to use the toxins for inoperable sarcoma, I did not expect the profession to adopt the method. I fully expected to wait until its great objection of novelty had given way to time and my own results had been duplicated and confirmed by other observers. No one could see the results which I saw and lose faith in the method. To see poor, hopeless sufferers in the last stages of inoperable sarcoma show signs of improvement, to watch their tumours steadily disappear, and finally see them restored to life and health was sufficient to keep up my enthusiasm. That only a few instead of the majority were followed by such brilliant results did not cause me to abandon the metho[illegible] more earnest search for further [illegible] now obtained, comprising 52 [illegible] that number in the hands of otl[illegible] I believe, to convince [illegible] toxin treatment of inc[illegible] sufficient value to be [illegible]

Mr. H. T. BUTLIN [illegible] Surgeons of England), in moving a vote of thanks to Dr. Coley, said that if America could spare Dr. Coley for one year this country would be glad to have his services.

Sir A. E. WRIGHT, who seconded, suggested that in order to raise the treatment carried out by Dr. Coley above the reproach of being founded only on clinical experience an enormous amount of laboratory work was required to supplement their knowledge. What was wanted was some method by means of which the dosage could be known [illegible] had not [illegible] ory side [illegible]

The CHAIRMAN said that they hoped to have some satisfactory basis for the use of the toxins, and that what Dr. Coley had said would encourage them to try the method in a disease which otherwise was so hopeless.

The vote of thanks was carried with acclamation, and Dr. COLEY in a few words acknowledged the honour. He pointed out that his method was absolutely scientific and was based on laboratory experiments.

THE NOTIFICATION OF TUBERCULOSIS IN IRELAND.

THE Tuberculosis Preventi[illegible] the Royal assent on Dec. 21 [illegible] of opposition in its passage [illegible] siderably modified in the p[illegible] of the measure had reference to the notification of tuberculosis. The Government wished this to be compulsory throughout Ireland, but in order that the Bill might pass it was found necessary to introduce a clause permitting local authorities to decide whether notification should be put in force within their areas. The first clause of the Act, being the portion of most interest to the medical profession, was printed in THE LANCET of Dec. 26th, p. 1946. One of its requirements is that the Local Government Board for Ireland shall make regulations for carrying into effect the provisions of this section. The Board has accordingly issued two orders which have been recently published in the *Dublin Gazette*, came into force on July 1st, and are designated respectively "The Tuberculosis (Conditions of Notification) (Ireland) Order, 1909," and "The Tuberculosis Regulations (Ireland) Order, 1909." The first portion of the following quotations is taken from an accompanying "Memorandum on the Objects of the Act" also issued by the Board.

The main aim and object of the Act and of the regulations made under it is to place further power in the hands of local authorities for preventing the spread of tuberculosis. Part I. of the Act deals with the notification of tuberculosis and disinfection of premises used by tuberculous patients [illegible] It was the desire [illegible] compulsory [illegible] unnecessary [illegible] patible with [illegible] as applicable [illegible] Act have not been extended to tuberculosis, and there is no power given to [illegible]

[illegible] same [illegible] loyed [illegible] r any [illegible] edical [illegible] with [illegible]

[illegible] any ...... [illegible] to prevent or check the spread of tuberculosis. ...... The sanitary

> authority, or the medical officer of health acting under a formal authorisation, may require the delivery of infected articles ...... for disinfection. ...... Compensation for u[illegible] process of disinfection may be paid. [illegible] mmodation shall be provided free of c[illegible] ...... [illegible]mpelled to leave their dwelling while disinfection is being carried out. ...... A penalty not exceeding £5 is imposed for obstructing a duly authorised officer ...... in carrying out ...... disinfection, and the officers are given a right of entry. ......
>
> *Hospitals and dispensaries.*—Part II. of the Act ...... deals with the provision by the council of any county (including the town council of a county borough), of hospitals, sanatoriums, and dispensaries for the treatment of the inhabitants of their county or county borough suffering from tuberculosis ....
>
> *Miscellaneous provisions.*—Part III. of the Act ...... contains provisions intended to deal with the prevention of tuberculosis. Sanitary authorities ...... may arrange for public lectures and for the distribution of literature on subjects relating to tuberculosis, and they may provide drugs and appliances, for example, spitting flasks. ...... Power is given to county councils to appoint a bacteriologist, being a medical practitioner, for the examination of meat or milk or milk products, and of sputum or pathological specimens. ...... In any county in which a bacteriologist has been appointed power is given to any medical officer of health ...... to take samples of milk or milk products for examination or analysis. ...... Penalties for obstruction are imposed, amounting in the case of a first offence to £20. ...... Where a veterinary surgeon certifies any milch cow to be affected with tubercular disease of the udder the sanitary authority may cause the animal to be slaughtered and may pay the owner compensation, the amount of which ...... shall not in any case exceed £10. The carcase ...... shall be ...... disposed of as the circumstances require. ......

It is not our purpose on the present occasion to make any detailed reference to the Act as a legislative measure, but merely to mention some obvious features of the instructions issued by the Local Government Board for Ireland in its Memorandum and Orders. Speaking generally, and keeping in mind the Parliamentary exigencies already mentioned, we believe that the Board has been actuated by an earnest desire to make the new legislation acceptable to the public. This is essential, for, as we have often remarked, no scheme for the prevention of epidemic disease can be permanently successful without the intelligent coöperation of a considerable section of the community. On the other hand, we think that the instructions are highly unsatisfactory from the medical point of view, and that there is good reason for the misgivings expressed by our Dublin correspondent in THE LANCET of July 10th. In each of the Orders a paragraph is quoted from the Act in the following terms:—

> If any medical practitioner attending on any person within any district to which Part I. of the Act extends becomes aware that that person is suffering in any prescribed circumstances from tuberculosis of any prescribed form or at any prescribed stage, the medical practitioner shall within seven days after he becomes aware of the fact send to the medical officer of health a certificate in the prescribed form and containing the prescribed particulars.

Definitions of the prescribed circumstances, form, and stage will be found in the preceding quotations from the Memorandum. Let us assume that a patient of the wage-earning class, such as a shop assistant, a clerk, an artisan, or a laundry ironer, comes to a surgery complaining of cough, expectoration, and loss of appetite, but nevertheless in full employment. The clinical history and the physical signs of pulmonary tuberculosis may be so obvious that there would be no difficulty in certifying the sputum to be infectious without bacteriological tests, but the medical practitioner is placed in the dilemma that the patient probably works in association with healthy persons and is therefore presumably notifiable. Inquiries concerning his fellow workers and previous medical advisers would arouse the patient's suspicions and trustworthy answers could not always be expected. If the practitioner fails to notify a case he takes the risk of being prosecuted and fined £2. If he is informed that the patient's fellow workers are healthy he perceives that the case is notifiable according to the statute, but he feels that in sending a statutory notification to the proper quarter he is taking the risk of receiving no fee because the sanitary authority may in reply inform him that the case has been notified already. If the patient is, or claims to be, married the case is notifiable when the partner is healthy, but not so when the partner is tuberculous. How is the practitioner to ascertain this without an examination of the other individual, who probably does not want to be examined and has no intention of paying a fee? The inconsistencies and difficulties of the practitioner's position are so obvious that there is no need of further examples. In short, it would be amply sufficient to ask the practitioner to notify the patient's name and address, together with a certificate that he suffers from tuberculosis in an infective stage, leaving the question of "prescribed circumstances" to be investigated by the officials of the sanitary authority.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY meeting of the Council was held on July 8th, the President, Sir HENRY MORRIS, Bart., being in the chair.

The PRESIDENT reported the result of the annual election of members of Council, as already reported in THE LANCET, and Sir W. Watson Cheyne, Mr. R. Clement Lucas, and Mr. Harrison Cripps were introduced, and, having made declarations in the terms of the oath prescribed by the Charter of 1800, took their seats in the Council.

A report was received from the museum committee with reference to the revision of the pathological catalogue, and the recommendations of the committee were approved; these included, among others, the appointment of a pathological assistant in the museum and the appointment of a expert to advise as to the gynæcological specimens. Th best thanks of the Council were given to the authorities o the Egypt Exploration Fund for their valuable gift of 8 skulls of the Sixth Dynasty, recently found at Abydos i Egypt.

An address was read, which had been presented by th President, on behalf of the College, to the chancellor, masters and scholars of the University of Cambridge on the occasio of the commemoration of the centenary of Charles Darwin birth. The best thanks of the Council were given to th President for preparing the address.

The following lecturers were appointed for the ensuin year:—Hunterian professors: Dr. Arthur Keith, four lecture on the Anatomy of the Negro and Negroid Races; Mr. W. Handley, two lectures on the Surgery of the Lymphati System; Mr. George Coats, two lectures on Congenital Abno malities of the Eye; Dr. R. Horace Paramore, two lectures o the Functions of the Pelvic Floor Musculature; and Dr. Bolton, two lectures on the Pathology of Gastric Ulce Arris and Gale lecturers: Mr. Sydney R. Scott, one lectu on the Physiology of the Human Labyrinth; and Dr. Pet Thompson, two lectures on the Erect Attitude, its Adoptio Maintenance, and Failures, with Especial Reference Certain Surgical Conditions. Erasmus Wilson lecture Mr. Samuel G. Shattock, six demonstrations on Surgic Pathology. Arnott demonstrator: Dr. Arthur Keith, s demonstrations of the Contents of the Museum.

Mr. H. T. Butlin was unanimously elected President, a Mr. Pearce A. Gould and Mr. Clement Lucas were appoint Vice-Presidents.

The next meeting of the Council will be held on Thursda July 29th.

MEDICINE AND THE LAW.

More about the Workmen's Compensation Act, 1906.

IN a recent letter to our columns[1] Mr. Albert Bentha made the recommendation that when an accident has incapa citated a workman it is in the interest of the employer to pa the half wages required by the Workmen's Compensatio Act with promptitude, and also to see that the workman receiving proper medical attention and nursing, as this wi in many cases shorten the period of invalidism. This soun advice might be taken notice of by insurance companies, wh presumably are usually responsible for the attitude adopte by the employer, and would be applicable to cases whe there is no doubt as to the liability to compensate. Th suggestion as to medical attention and nursing might ofte prove valuable in instances where the workman is honestl anxious to get well, but a substantial number of case under the Workmen's Compensation Act have unavoidabl formed the subject of legal intervention and one poin seems to have been elicited with frequency—namely, tha the injured man, supposing that he is injured, is no necessarily in a hurry to be declared sound again. It has however, been more often the liability of the employer compensate which has formed the subject of repeated argu ment than any question as to the duration and extent of th injuries.

The case of Craske *v.* Wigan, which was recently made th subject of an appeal before the Master of the Rolls, Lord Justice Buckley, and Lord Justice Kennedy, from the award of the Gloucester county court judge, is worth recording briefly for medical readers. The applicant for compensation was a ladies' maid, who one evening sat sewing by an open window with an electric lamp near her. While she was so engaged a cockchafer flew into the room and in endeavouring to repel it as it hovered round her head she struck herself a blow with her knuckle in the right eye, inflicting injuries which resulted in her losing her sight in the organ. It is stated in one report which we have seen of this case that the work which the maid was engaged upon was not her mistress's but her own; the Court of Appeal does not, however, seem to have laid any stress on this, but in a judgment which distinguished the case from Andrew *v.* Failsworth (1904, 2 K.B. 32), Challis *v.* London and South-Western Railway Company (1905, 2 K.B. 154), and Rowlandson *v.* Wright (24 Times Law Reports, 852) decided against the claimant. The court held that it had to apply the words "arising out of" the employment to the accident, and not only the words "in the course of." It must be proved that the accident arose because of something that the workman was doing in the course of his work or because his work placed him in a position of peculiar danger, otherwise the accident would not be one "arising out of" the employment. The case is interesting because it lays down decisively the principle to be applied and it also illustrates the unlikely and unpreventable occurrences for which an employer has been asked to pay compensation under the Act. In another recent case (Charles *v.* Walker Limited) the facts surrounding the workman's death may usefully be noted. He had suffered injuries which necessitated the amputation of the index finger of his left hand, and just as he was recovering from the anæsthetic after this had been successfully carried out those operating decided to remove a tooth of which he had complained. A further anæsthetic was administered, the attempt to remove the tooth was unsuccessful, and the patient was removed to the ward and there died. The county court judge, in deciding on the claim of the widow that the death was the result of the accident found that it was at least as probable that it resulted solely from a spasm induced by an attempt to swallow blood oozing into the mouth owing to the second operation, as that it was due to the anæsthetic administered for the first operation, and that the claimant must consequently fail as she had to prove her case and had not done so. The Court of Appeal upheld this decision, being of the opinion that the county court judge had "rightly directed himself"—i.e., that he had rightly applied the legal principles which it would have been his duty to explain to a jury if there had been one to assist him in such a case. The Master of the Rolls concluded his judgment by saying that the county court judge was not satisfied, nor was he, that death resulted from the operation for the removal of the finger, and the widow had "failed to discharge the onus which lay upon her of proving this fact." In a third case (Ystradowen Colliery Company *v.* Griffiths) the workman, a collier, met with an accident which injured his knee. Owing to this injury he took more than two hours to reach his home, a distance of a mile and a quarter, on a cold day, with the result that he contracted pneumonia, and when he made his claim was incapacitated from work by bronchitis and chronic asthma. The county court judge had held that this was not the natural result of the accident, and that consequently the employers were not liable to pay full compensation. But the Court of Appeal held that this was wrong and remitted the case to the county court judge, saying for his guidance, in accordance with the case of Dunham *v.* Clare (1902, 2 K.B. 292), that the principle governing the matter was not what might be the reasonable, or probable, or natural result of the accident, but whether, in fact, the condition complained of was due to it. In the instance before them the county court judge must consider whether the workman's condition was a result of the accident in the sense that it was occasioned by the debilitated condition of the man immediately after the accident. This case should warn employers as to the desirability of giving prompt aid to their workpeople when it is possible to do so after accidents for which they may be liable, and it adds force to the suggestion of Mr. Benthall quoted above. A decision upon somewhat similar lines, in which an insurance company was held liable as for an accident where death from pneumonia followed a hunting fall, was reviewed in THE LANCET of Feb. 27th, p. 642. In another recent appeal under the Workmen's Compensation Act the claim was based upon lead-poisoning contracted by a seaman when engaged in painting on board his ship at sea. The county court judge refused compensation and the Court of Appeal upheld this decision upon the construction of the Act, which admittedly would have rendered the employers liable as for an accident if the lead-poisoning had been contracted in a factory or elsewhere ashore, and if the conditions of the Act with regard to certification by the factory surgeon of the district had been complied with. It was held, however, that the Act only contemplated and provided machinery for industrial diseases contracted where there was a district with a factory surgeon to certify when they occurred, and that, whether intentionally or not, seamen at sea had been omitted from the benefits of the section bearing upon the subject (Section 8). The Master of the Rolls observed in his judgment that it was "impossible to read this section without holding that it did not apply to the case of a seaman."

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[1] THE LANCET, May 29th, p. 1555.

Dentistry by the Unqualified.

After more than one adjournment Mr. Garrett, sitting at the South-Western police-court, dismissed the summonses against two defendants, Oscar Farkasch and Joseph Leo Rosenscheim of "the London Hygienic Institute," under the Dentists Act alleging the use of descriptions in the conduct of their business implying that they were specially qualified to practise dentistry. At a previous hearing another Rosenscheim had been dismissed from the case owing to lack of evidence connecting him with the charges. A fourth man, Newman by name, was held to have made a representation which brought him within the Act, and was fined £5, with £5 5*s.* costs. The case was dismissed as far as it concerned the principals in a business (in which the person fined was employed by them) apparently on the grounds that the skill in dentistry which they advertised was not puffed in terms which professed qualifications of a registrable character. The learned magistrate expressed the view that any man was allowed by law to extract teeth; that if he chose to say that he extracted them well he was again within his rights; and that the defendants had vaunted their skill in this manner but without going so far as to claim special qualification within the meaning of the Act. In these circumstances the comment which suggests itself is that the policy of the Dentists Act, in which it resembles the Medical Acts, is ostensibly to confer a limited amount of protection upon those whose names are on the Dental Register, and to afford means to the more educated classes of the community of distinguishing between qualified and unqualified persons. For the less educated and intelligent section of the public it provides no protection whatever, either ostensibly or in fact, leaving them to the mercy of anyone who has the commercial energy to advertise, combined with the physical strength necessary for the extraction of teeth.

Mr. Brighouse and the Town Council of Warrington.

Mr. S. Brighouse, coroner for South-West Lancashire, recently selected the conclusion of an inquest at Warrington as an occasion for making public a correspondence which has passed between him and Dr. J. C. Hibbert, medical officer of health of Warrington, and for commenting upon it. The statement was made while the jury, assembled for the purpose of an inquest which had been concluded, were signing their verdict and had nothing to do with the matter before the court, the coroner apparently desiring to obtain in this manner for his opinions the publicity conferred by a report in the local newspapers. Mr. Brighouse began by stating that Dr. G. W. Joseph, a member of the Warrington town council, had called attention, in a discussion upon the report of the medical officer of health of the town, to the infantile death-rate and to the high percentage of uncertified deaths at Warrington. Dr. Joseph had referred to the certainty of an inquest being held as a deterrent to people who might otherwise be guilty of criminal neglect of their children, and had [illegible] eparate coroner for Warr [illegible] oner for the district (Mr. I [illegible] exercised his jurisdictic [illegible] in criticising these views, [illegible] oner for Warrington would cost the ratepayers more than the existing system, and observed that he was speaking to the ratepayers by the courtesy of the jury, to whom in form his remarks were addressed. He then proceeded to read and criticise an extract from an annotation which appeared in THE LANCET of Sept. 5th, 1908, p. 748, in which attention was called to the high percentage of uncertified deaths in certain towns, among which Warrington was specially mentioned. In that article, which was based upon the Registrar-General's returns for the first half of 1908, the proportion of cases in which there was no certificate to the total of deaths registered was given as 6·3 per cent. in Warrington, as contrasted with an average of 1·4 per cent. in England and Wales and an average of less than 1·0 per cent. in the 76 large towns, among which Warrington was included. Mr. Brighouse then read a letter received by him from Dr. Hibbert, referring to the article in THE LANCET and stating that the attention of the health committee had been called to the matter. From this letter the following passage may be quoted: "The only reason I can ascertain for this high figure is the small percentage of inquests held on deaths uncertified by a doctor." Mr. Brighouse had replied in a letter which he also read. It began with a disquisition upon the duties of a coroner as defined by Section 3 of the Coroners Act, 1887, and went on to indicate the practice followed by him in these terms: "In 15 of these cases (18 deaths reported by the Warrington police in three months and upon which no inquests were held) a medical officer conversant with the case had been sent by the police and had expressed an opinion as to the cause of death which enabled me to dispense with an inquest. If in the face of these expressions of opinions by medical men I had held inquests I should have been intruding without adequate cause upon the privacy of a family in distress. In one of the remaining three cases the lady sanitary inspector of the Warrington corporation, together with the midwife, was present at the death of the child. ...... In the remaining two cases the police reports conveyed sufficient information to me to enable me to come to the conclusion that the deaths were from natural causes." The letter containing this passage concluded with the suggestion that "if the writer in THE LANCET proposes that in every case where a medical man is unable to certify as to the cause of death there should be an inquest held by me, then it will follow that there must be a post-mortem examination, and he had better place himself in communication with the county council of Lancashire and then come and sit with me when I hold unnecessary inquests and hear what the relatives have to say in the matter. The Coroners Act of 1887 has to be construed in a common-sense way, and I trust that I carry out the duties attaching to my office so as to comply with the Act of Parliament and at the same time not to wound the feelings of those who are in sorrow and distress." Another letter, also written by Mr. Brighouse to the medical officer of health, was then read. It contained as a typical instance of an uncertified death not made the subject of an inquest by the coroner the case of the wife of a member of the Warrington town council who, having been long in delicate health and under the care of a medical practitioner, died when an interval of six months had elapsed since her medical attendant had last visited her. Such a case is so obviously not typical of those under discussion that no comment is needed; but the letter concludes with another appeal of a similar character to those already quoted: "What does THE LANCET think I ought to do under these circumstances—intrude into the privacy and sorrow of the family, order a post mortem and hold an inquest? Whatever THE LANCET may say I am not going to do it, and if I so acted under the circumstances above described I do not think I should stand well in the eyes of your town council." After reading a letter in reply from Dr. Hibbert, Mr. Brighouse concluded his address with a peroration in which he referred once more to his reluctance "to intrude into the privacy of families in the midst of their sorrows."

In commenting upon these remarkable utterances of a coroner we can do no better than again quote Dr. Hibbert, who wrote: "The main point, I think, which has exercised the minds of the health committee of Warrington is why the percentage of uncertified deaths in this borough should be so much higher than in most other districts. *Is it to be inferred that coroners elsewhere unduly intrude without cause on the privacy of families in distress, and that in other districts inquests are* held where a doctor, although not able to certify the cause of death, can nevertheless express an informal opinion as to its cause? I must say that as medical officer of health I have felt that the more frequent holding of inquests, especially in connexion with the deaths of infants, the causes of which are uncertified by a doctor, would tend to make careless parents more prompt in calling in a doctor to an ailing child and more careful about its feeding and general welfare." This puts the case against Mr. Brighouse's system quite clearly, and we note that he gave no information as to the proportion of infantile deaths among the 18 uncertified cases in which during three months he decided not to hold any inquest. The nature of the system under which he obtained through medical men the information necessary to enable him to form an opinion in 15 instances we do not know, nor do we understand how medical men could make sufficiently exhaustive inquiries to enable such a conclusion to be correctly arrived at in all cases without considerable intrusion upon the privacy of any families involved. Whence they derived authority to make such inquiries and whether they in fact made them we cannot discuss from the information upon the subject contained in Mr. Brighouse's speech. At this juncture the point for the attention of the Warrington town council is one worthy of their consideration, and we are glad to see that, having the reputation of their town at stake, they are weighing it seriously. It is, as Dr. Hibbert puts it, whether the coroner for South-West Lancashire is right and practically all the other coroners in England and Wales are wrong in their methods, and whether an appreciable amount of infant mortality (and a great deal of infant suffering not ending fatally) might be prevented by the strong probability of a stringent inquiry following when a child dies after receiving no medical attention. We are perfectly well acquainted with the provisions of the Coroners Act, 1887, Section III. They are not incapable of amendment and improvement, but the words "Where ...... there is reasonable cause to suspect" that the deceased "has died a violent or unnatural death or has died a sudden death of which the cause is unknown" are sufficiently wide to allow of an inquest being held in cases in which the immediate cause of death is natural and not obscure, but in which contributing causes of neglect or wanton exposure to risk may render inquiry very desirable. Such inquiry is likely to reveal or to disprove the existence of culpable conduct on the part of persons responsible when before an inquest there is only "reasonable cause" to suspect it, and few are likely to blame a coroner who is suspicious on such occasions. Mr. Brighouse thinks otherwise, but his appeals for the approval of those into whose family sorrow and privacy he does not wish to intrude carry their own condemnation. The Warrington town council can probably estimate the amount of family sorrow and privacy that would be outraged in such cases as the 18 to which he refers, and will no doubt be of the opinion that the functions of a coroner should be exercised tactfully and sympathetically but without regard for the praise or obloquy of the general public.

THE ROYAL BUCKINGHAMSHIRE HOSPITAL.—On July 3rd Sir Frederick Treves, accompanied by Lady Treves, paid a visit to the Royal Buckinghamshire Hospital at Aylesbury. Sir Frederick Treves, who has taken great interest in the planning of the recently completed extension of this hospital, was met at the door of the institution by the chairman of the board of governors, Mr. George Carrington, and the medical staff of the hospital. Sir Frederick Treves, after inspecting the new wing, congratulated the board of management upon the possession of a hospital completely equipped in accordance with the requirements of modern medicine and surgery. In appealing for financial support—£1800 is required to free the hospital from debt—Sir Frederick Treves pointed out that a properly equipped hospital was necessary in order that physicians and surgeons might retain their skill and ability. For this reason the rich benefited from the existence of a hospital quite as much as the poor. "If," said the speaker, "I hear anyone say, 'I decline to support hospitals as they are only for the benefit of the poor, whom I support in other ways,' I tell him to support a hospital for the benefit of the rich by keeping up the standard of medical and surgical science in the district."

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Leicester Borough.—The population of this borough was estimated in the middle of 1908 at 240,172, but Dr. C. Killick Millard thinks that this figure is too high if the basis of the number of inhabited houses be employed for the computation; he puts the population at 226,200. All the rates are, however, calculated on the Registrar-General's estimate. At the beginning of the nineteenth century the people of Leicester numbered only 17,005, and in 1851 only 60,584. In 1891 the borough boundaries were extended. The marriage rate has shown minor fluctuations but generally a steady decline; but in 1908, for the first time for six years, the births have shown no decrease. The death-rate, which in 1872–76 was 25·18 per 1000, was in 1908 under 13, and Dr. Millard, in claiming a large share in such reduction for preventive medicine, observes that, although during the past 33 years there have been six medical officers of health, the same chairman (Alderman Windley) has for the whole of this period presided over the sanitary committee. Amongst the improvements brought about in Leicester is to be included the reduction which has taken place in infantile mortality, which in 1892–96 was 194·4 per 1000 births, and which is now about 130 per 1000 births. But this mortality amongst illegitimate births is still sufficiently appalling—for 1905–08 no less than 357. The new Vaccination Act has not been without its influence even in Leicester. The number of vaccinations during 1908 decreased by 40 per cent., and the exemptions granted increased by 91 per cent. Enteric fever has undergone a marked decrease in Leicester during recent years, there having been only 48 cases with eight deaths in 1908. Dr. Millard points out that there has been a marked decline in the prevalence of this disease in the country as a whole, but that there are now few towns which have a lower death-rate than Leicester—i.e., 0·33 per 10,000. The remarkable reduction which has taken place is ascribed largely to the abolition of the Leicester pail closets, and Dr. Millard draws attention to the difference which obtains in enteric fever death-rate between Leicester and Nottingham, the latter town, which has retained its pail closets, showing but a very slight decline in the prevalence of the disease. For some years past a limited number of patients suffering from pulmonary tuberculosis have been admitted into one of the blocks of the isolation hospital, and Dr. Millard gives an account of some of the after-histories. The patients are admitted in the first instance for a month only, and at the end of that time, if the case is making satisfactory progress, a second month's stay is granted subject to a payment of 10*s.* weekly. Calmette's ophthalmic tuberculin test has been applied during 1908 both at the hospital and the town-hall upon patients sent for the purpose by medical men, but Dr. Millard thinks that although the test is of undoubted value it is neither entirely reliable nor free from the serious drawback of, at times, setting up troublesome conjunctivitis. He advises the employment of a weak solution in the first instance. The Notification of Births Act, 1907, has not yet been adopted in this town owing to the unwillingness of the medical practitioners, and a voluntary system is at present in vogue which does not seem to have been attended with signal success. There is a crematorium in Leicester, but its popularity is not, after an existence of over six years, very great, only 14 cases having selected this method of material dissolution during 1908. Dr. Millard states that in the whole country (13 crematoriums) there were 795 cremations in 1908, while on the continent during the same period 4050 persons underwent cremation. The fees for cremation at Leicester is £2 2*s.* for residents and £5 5*s.* for non-residents.

Southend Borough.—Dr. O. G. Pugh succeeded Dr. J. T. O. Nash as medical officer of health of this district in June, 1908, and the latter has contributed a short report for the first half of the year. Dr. Pugh is, however, responsible for the whole of the vital statistics. One of the most satisfactory features in the history of the borough during 1908 was the continued low infantile mortality, which amounted to only 93·62 per 1000 births, a rate which is slightly below that of the previous year, when it was 94·05 per 1000 births. Dr. Pugh emphasises the necessity for the provision of sanatorium treatment of pulmonary tuberculosis, and he hopes that when the additions now being made to the isolation hospital have been completed it may be possible to utilise one of the wards for the educational treatment of patients suffering from this disease. As in many other of our large towns, a marked diminution of enteric fever has taken place in Southend during the last ten years, the death-rate for 1908 being 0·5 per 10,000 of the population. Of the indigenous cases 13 were ascribed to shell-fish, and it is to be noted that in four cases the onset of the disease took place only a week after the consumption of the shell-fish. In some of the 13 cases which were associated with the eating of shell-fish other members of the family partook of the shell-fish at the same time, but, except in one instance, only one member of the family contracted the disease. But in three instances the only member of the family to be attacked was the one who had eaten shell-fish. With reference to the utility of the isolation hospital the medical officer of health remarks that the hospital problem hardly arises in a place like Southend, where it is obviously desirable that cases occurring in hotels or lodging-houses should be at once removed to hospital owing to the financial consequences involved. As so many of the ratepayers of Southend obtain a livelihood by letting rooms it is improbable that there will be found in the borough any serious question as to the value of these essential institutions.

Sunderland County Borough.—Dr. Henry Renney embodies in his report for 1908 an interesting table showing the number of children born per 1000 women at child-bearing age, the rates ranging from 146 in 1899 to 130 in 1908. In the matter of small-pox the medical officer of health utters a warning note concerning the sinister operations of the Vaccination Act, 1907, in consequence of which measure there were in 1908 445 "conscientious" objectors, as against 60 in 1907. The case mortality of diphtheria has shown a steady diminution since the year 1890, but the prevalence of the disease, as measured by the notifications, has shown a marked increase during the last four years. For the last eight years the corporation has rented beds at the Stanhope sanatorium, and during that period 69 consumptive patients have undergone treatment therein. Of this total 40 are now dead, two are ill, and eight cannot be traced, while 19 are either "well" or "fairly well." Of the 21 patients who are still under observation two have been discharged nearly eight years and others from three to six years. Dr. Renney remarks that although sanatorium treatment arrests the disease it does not always prevent a recurrence, and hence the necessity for placing the patients under favourable conditions after discharge. This is unfortunately not very easy of accomplishment owing to the indisposition on the part of employers of labour to engage the once tuberculous, a fact which is becoming more and more apparent every day. These objections are due partly to an unreasonable dread of infection, partly to a belief that sanatorium treatment tends to induce slackness as regards work.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7786 births and 3711 deaths were registered during the week ending July 10th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 12·6 to 11·8 per 1000, was again so low as 11·8 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 14·0 per 1000, against 14·9 and 13·7 in the corresponding quarters of 1907 and 1908; the mean rate in London during last quarter did not exceed 13·5, against 14·0 and 12·7 in the two preceding corresponding quarters. The lowest recorded annual death-rates in the 76 towns last week were 4·5 in King's Norton, 4·9 in Hornsey, 5·2 in Willesden, and 5·6 in Tottenham, all being distinctly suburban districts; the rates in the other towns ranged upwards, however, to 16·8 in Middlesbrough and in Tynemouth, 16·9 in Wolverhampton, and 17·4 in Hanley. In London the recorded death-rate last week did not exceed 12·0, showing, however, an increase upon the exceptionally low rate in the previous week. The 3711 deaths in the 76 towns last week from all causes showed a further decline of 22 from the decreasing numbers in recent weeks, and included 341 which were referred to the principal epidemic diseases, against numbers declining from 393 to 321 in the four preceding weeks; of these 341 deaths, 138 resulted from measles, 64 from diarrhœa, 59 from whooping-cough, 39 from scarlet fever, 32 from diphtheria, and nine from "fever" (principally enteric), but not one from small-pox. The 341 deaths from these epidemic diseases last week were equal to an annual rate of 1·1 per 1000, against 1·0 in the previous week. No death from any of these epidemic diseases was registered last week in Stockport, Hornsey, Rochdale, Aston Manor, or in nine other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·1 in Walsall, 3·3 in St. Helens, 4·6 in Coventry, and 5·0 in Wolverhampton. The fatal cases of measles in the 76 towns, which had declined in the four preceding weeks from 186 to 129, rose again last week to 138, and caused annual death-rates ranging upwards to 2·6 in Walsall, 3·0 in West Bromwich, 4·6 in Coventry, and 5·0 in Wolverhampton. The 64 deaths attributed to diarrhœa showed an increase of 15 upon the number in the previous week, and exceeded those returned in any preceding week of this year. The deaths from whooping-cough, which had been 57, 63, and 70 in the three previous weeks, declined again last week to 59, and caused the highest death-rates, 1·1 in Huddersfield, 1·2 in Derby, and 1·5 in Middlesbrough. The 39 fatal cases of scarlet fever showed a further slight increase upon the low numbers in the two preceding weeks, and included 15 in London and its suburban districts, four in Liverpool, eight in Manchester and Salford, and two in Newcastle-on-Tyne. Of the 32 deaths assigned to diphtheria, exceeding the number in the previous week by four, 13 occurred in London and its suburban districts, three in Manchester and Salford, and two each in Brighton, Southampton, and Birmingham. Only nine deaths were referred to "fever" in the 76 towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily increased in the five preceding weeks from 2228 to 2537, had further risen to 2647 on Saturday last; 371 new cases of this disease were admitted to these hospitals during last week, against 468, 368, and 390 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 155 and 158 in the two previous weeks, declined again to 154 last week, but exceeded the corrected average number in the corresponding week of the five years 1904–08 by 28. The deaths in London directly referred to influenza declined last week to seven, from 13 and 11 in the two preceeding weeks. The causes of 28, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during the week were again duly certified in London, Leeds, Bristol, West Ham, Bradford, Sheffield, Newcastle-on-Tyne, and in 52 other smaller towns; the 28 uncertified causes of death in the 76 towns included six in Liverpool, five in Birmingham, and two both in Sunderland and Reading.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 871 births and 462 deaths were registered during the week ending July 10th. The annual rate of mortality in these towns, which had been equal to 12·7 and 13·3 per 1000 in the two preceding weeks, declined again to 12·9 in the week under notice. During the 13 weeks of last quarter the death-rate in these Scotch towns averaged 16·0 per 1000, while in the 76 large English towns the mean death-rate during the same period did not exceed 14·0. The death-rates last week in these Scotch towns ranged from 11·5 in Greenock and 12·2 in Glasgow, to 14·1 in Aberdeen and 14·6 in Leith. The 462 deaths from all causes in the eight towns showed a decline of 15 from the number returned in the previous week, and included 36 which were referred to the principal epidemic diseases, against 56, 54, and 37 in the three preceding weeks. These 36 deaths were equal to an annual rate of 1·0 per 1000, corresponding with the rate in the previous week; the rate last week from the same epidemic diseases in the 76 large English towns was equal to 1·1 per 1000. Of the 36 deaths from these epidemic diseases in the Scotch towns, 12 resulted from whooping-cough, 12 from diarrhœa, seven from measles, two from both scarlet fever and diphtheria, and one from "fever," but not one from small-pox. The 12 fatal cases of whooping-cough showed a further slight decline from recent weekly numbers and included five in Glasgow and four in Edinburgh. The 12 deaths attributed to diarrhœa, exceeded those returned in the previous week by one; five occurred in Glasgow and four in Dundee. The fatal cases of measles, which had been 13, eight, and five in the three previous weeks, were seven last week, of which four occurred in Paisley and two in Glasgow. Both the deaths from scarlet fever were returned in Glasgow; and of the two from diphtheria, one each occurred in Glasgow and in Edinburgh. Only one death was referred to "fever" in the eight towns, and was certified as typhus in Dundee. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 64 and 71 in the two preceding weeks, declined to 61 in the week under notice, but exceeded the number in the corresponding week of last year by ten. The deaths in the eight towns last week included 25 which were referred to different forms of violence, of which 13 occurred in Glasgow, five in Aberdeen, and three in Edinburgh. The causes of 17, or 3·7 per cent., of the deaths in the eight towns last week were uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 15·7, 19·6, and 18·5 per 1000 in the three preceding weeks, declined again to 15·6 in the week ending July 10th, a lower rate than in any previous week of this year. During the 13 weeks of last quarter the death-rate in the city averaged 20·9 per 1000, whereas the mean rate during the same period did not exceed 13·5 in London and 15·8 in Edinburgh. The 119 deaths of Dublin residents from all causes registered last week showed a further decline of 32 from the numbers returned in the two preceding weeks, and included but three which were referred to the principal epidemic diseases, against eight and 13 in the two previous weeks. These three deaths were equal to an annual rate of but 0·4 per 1000, the death-rate from these same epidemic diseases being equal to 1·0 in London and 0·9 in Edinburgh. Of the three deaths from these epidemic diseases in Dublin last week, two resulted from diarrhœa and one from diphtheria, but not one from measles, scarlet fever, whooping-cough, "fever," or small-pox. The 119 deaths at all ages included 21 of infants under one year of age and 32 of persons aged upwards of 60 years; both these numbers showed a considerable decline from the numbers in the previous week. Three inquest cases and two deaths from violence were registered during the week; and 49, or 41·2 per cent., of the deaths occurred in public institutions. All the causes of death registered in the city last week were again duly certified either by a registered medical practitioner or by a coroner; in London, also, all the causes of death last week were duly certified, but in Edinburgh the proportion of uncertified causes of death was equal to 6·4 per cent.

VITAL STATISTICS OF LONDON DURING JUNE, 1909.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·5 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 5·9, 5·4, and 6·1 per 1000 respectively. The lowest rates last month were recorded in Kensington, Hampstead, Stoke Newington, Holborn, Finsbury, and Camberwell; and the highest rates in Paddington, Chelsea, the City of Westminster, St. Marylebone, Lewisham, and Woolwich. The prevalence of scarlet fever again showed an increase last month; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Chelsea, the City of Westminster, St. Marylebone, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 2539 scarlet fever patients at the end of last month, against 2412, 2143, and 2207 at the end of the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1909

(Specially compiled for THE LANCET *)*

CITIES AND BOROUGHS	Estimated population in the middle of 1909	NOTIFIED CASES OF INFECTIOUS DISEASE											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES											Deaths from all causes	Death rate per 1000 living	Deaths of infants under one year to 1000 births
		Small pox	Scarlet fever	Diphtheria *	Typhus fever	Enteric fever	Other continued fevers	Puerperal fever	Erysipelas	Cerebro-spinal meningitis	Total	Annual rate per 1000 persons living	Small pox	Measles	Scarlet fever	Diphtheria *	Whooping cough	Typhus fever	Enteric fever	Other continued fevers	Diarrhœa	Total	Annual rate per 1000 persons living			
LONDON	4 833 938	—	1933	577	2	83	1	33	374	12	3015	6·5	—	240	33	34	109	—	10	—	64	495	1·1	5137	11·1	84
West Districts																										
Paddington	151 955	—	88	21	—	4	—	—	8	1	122	8·4	—	12	2	1	—	—	1	—	3	19	1·3	174	11·9	84
Kensington	183 683	—	40	14	—	6	—	1	16	—	77	4·4	—	7	1	2	7	—	—	—	3	20	1·1	180	10·2	108
Hammersmith	125 704	—	50	25	—	—	—	2	6	1	84	7·0	—	23	3	4	4	—	—	—	3	37	3·1	157	13·0	104
Fulham	176 406	—	59	34	—	4	—	4	14	—	115	6·8	—	22	—	1	4	—	1	—	4	32	1·9	187	11·1	112
Chelsea	75 249	—	79	10	—	2	—	—	2	—	93	12·9	—	—	1	1	1	—	—	—	1	4	0·6	70	9·7	52
City of Westminster	163 883	—	115	20	—	—	—	—	19	—	154	9·5	—	4	3	1	3	—	—	—	2	13	0·8	171	10·6	100
North Districts																										
St Marylebone	126 027	—	63	10	—	2	—	—	21	—	96	7·9	—	2	1	—	1	—	—	—	2	6	0·5	144	11·9	57
Hampstead	94 185	—	22	4	—	1	—	—	3	1	31	3·4	—	3	1	—	4	—	1	—	—	9	1·0	75	8·3	77
St Pancras	237 432	—	70	26	—	4	—	2	9	—	111	4·9	—	8	—	4	4	—	—	—	1	17	0·7	244	10·7	77
Islington	351 202	—	128	33	—	5	—	1	15	—	182	5·4	—	22	2	1	6	—	1	—	2	34	1·0	363	10·8	91
Stoke Newington	54 423	—	5	4	—	—	—	—	1	—	10	1·9	—	—	—	—	2	—	—	—	—	2	0·4	29	5·6	42
Hackney	237 601	—	65	23	—	6	1	3	22	2	127	6	—	2	2	—	2	—	1	—	4	11	0·5	206	9·0	66
Central Districts																										
Holborn	53 802	—	8	11	—	1	—	—	2	—	22	4·3	—	4	—	—	1	—	—	—	1	6	1·2	62	12·0	70
Finsbury	95 289	—	20	11	—	1	—	—	10	—	42	4·6	—	18	—	—	6	—	—	—	2	26	2·8	145	15·9	84
City of London	18 193	—	6	3	—	—	—	—	1	—	10	5·7	—	—	—	—	—	—	—	—	—	—	—	40	22·9	227
East Districts																										
Shoreditch	114 802	—	42	22	—	3	—	1	9	—	77	7·0	—	13	—	3	7	—	1	—	—	24	2·2	133	12·1	74
Bethnal Green	131 316	—	56	9	—	2	—	1	21	1	90	7·1	—	7	—	1	4	—	—	—	3	15	1·2	170	13·5	111
Stepney	312,525	—	123	49	—	—	—	2	39	—	213	7·1	—	22	3	1	6	—	—	—	7	39	1·3	388	13·0	100
Poplar	171 965	—	70	24	—	2	—	1	14	1	112	6·8	—	17	1	—	8	—	1		4	31	1·9	219	13·3	114
South Districts																										
Southwark	211 125	—	70	26	—	3	—	1	23	—	123	6·1	—	12	2	2	3	—	1			26	1·3	263	13·0	76
Bermondsey	127 569	—	37	12	2	6	—	2	11	—	70	5·7	—	1	—	2	10	—	—	—		17	1·4	184	15·0	145
Lambeth	324 188	—	142	28	—	6	—	3	16	2	197	6·3	—	9	2	2	6	—	1	—	4	24	0·8	321	10·3	52
Battersea	186 036	—	62	34	—	7	—	2	17	—	122	6·8	—	12	—	1	4	—	1	—	2	20	1·1	195	10·9	83
Wandsworth	297 646	—	126	23	—	7	—	3	11	2	172	6·0	—	8	4	1	6	—	—	—	2	21	0·7	272	9·5	61
Camberwell	283 022	—	63	21	—	1	—	1	25	—	111	4·1	—	8	4	1	4	—	—	—	3	20	0·7	293	10·8	
Deptford	118 533	—	26	15	—	1	—	—	18	1	61	5·4	—	—	2	1	3	—	—	—	—	6	0·5	112	9·8	89
Greenwich	111 014	—	53	10	—	7	—	—	6	—	76	7·1	—	—	1	—	1	—	—	—	—	2	1·9	82	7·7	57
Lewisham	160 749	—	86	27	—	2	—	—	6	—	120	7·8	—	—	2	2	2	—	—	—	1	7	0·5	124	8·0	66
Woolwich	133 374	—	159	23	—	—	—	3	10	—	195	15·2	—	4	1	2	—	—	—	—	—	7	0·6	134	10·5	66
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup

three preceding months; the weekly admissions averaged 353, against 278, 262, and 318 in the three preceding months. Diphtheria was rather less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Hammersmith, Fulham, Holborn, Shoreditch, Battersea, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1103, 1012, and 920 at the end of the three preceding months, had further fallen to 890 at the end of last month; the weekly admissions averaged 105, against 121, 109, and 108 in the three preceding months. The prevalence of enteric fever showed a slight increase last month; this disease was proportionally most prevalent in Paddington, Kensington, Chelsea, Hackney, Shoreditch, Bermondsey, Battersea, and Greenwich. There were 58 enteric fever patients in the Metropolitan Asylums Hospitals at the end of last month, against 87, 57, and 49 at the end of the three preceding months; the weekly admissions averaged nine, against seven, nine, and eight in the three preceding months. Erysipelas was proportionally most prevalent in the City of Westminster, St. Marylebone, Finsbury, Bethnal Green, Stepney, Southwark, and Deptford. The 33 cases of puerperal fever notified during the month included four belonging to Fulham, and three each to Hackney, Lambeth, Wandsworth, and Woolwich Of the 12 cases notified as cerebro-spinal meningitis, two belonged to Hackney, two to Lambeth, and two to Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the five weeks ending July 3rd the deaths of 5137 persons belonging to London were registered, equal to an annual rate of 11·1 per 1000; in the three preceding months the rates were 21·4, 15·0, and 12·9 per 1000. The lowest rates recorded last month were 5·6 in Stoke Newington, 7·7 in Greenwich, 8·0 in Lewisham, 8·3 in Hampstead, 9·0 in Hackney, and 9·5 in Wandsworth; the highest rates were 13·3 in Poplar, 13·5 in Bethnal Green, 15·0 in Bermondsey, 15·9 in Finsbury, and 22·9 in the City of London. The 5137 deaths from all causes included 495 which were referred to the principal infectious diseases; of these, 240 resulted from measles, 38 from scarlet fever, 34 from diphtheria, 109 from whooping-cough, ten from enteric fever, and 64 from diarrhœa, but not any from small-pox, from typhus fever, or from ill-defined pyrexia No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, St. Marylebone, Stoke Newington, Hackney, Deptford, Lewisham, and Woolwich; and the highest rates in Hammersmith, Fulham, Finsbury, Shoreditch, Poplar, and Greenwich. The 240 fatal cases of measles were slightly below the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Paddington, Hammersmith, Fulham, Holborn, Finsbury, Shoreditch, and Poplar. The 38 deaths from scarlet fever were nine fewer than the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Hammersmith, the City of Westminster, Wandsworth, Camberwell, and Deptford. The 34 fatal cases of diphtheria showed a decline of 13 from the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, St. Pancras, Shoreditch, Bermondsey, and Woolwich. The 109 deaths from whooping-cough were 32 below the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Hampstead, Finsbury, Shoreditch, Poplar, and Bermondsey. The ten fatal cases of enteric fever were considerably below the average; the ten deaths belonged respectively to Paddington, Fulham, Hampstead, Islington, Hackney, Shoreditch, Poplar, Southwark, Lambeth, and Battersea. The 64 deaths from diarrhœa were 35 fewer than the corrected average number; this disease was proportionally most fatal in Hammersmith, Bethnal Green, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 16 per cent. below the average for the same period of the five preceding years.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 84 per 1000. The lowest rates of infant mortality were recorded in Chelsea, St. Marylebone, Stoke Newington, Lambeth, Wandsworth, and Greenwich; and the highest rates in Kensington, Fulham, the City of London, Bethnal Green, Poplar, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: H. W. Finlayson to the *Blake*; and H. E. Tomlinson to the *Assistance*. Staff-Surgeons: A. A. Forrester to the *Pyramus*, on recommissioning; A. F. Fraser to the *Terrible*, and to the *Flora*, on recommissioning; G. R. MacMahon to the *Terrible*, for medical charge on voyage to Colombo, and to the *Penguin*, additional, for Sydney Medical Depôt; W. L. Martin and S. H. Woods to the *Terrible*, and to the *Cambrian*, on recommissioning; R. Hughes to the *Terrible*, and to the *Psyche*, on recommissioning; P. F. Alderson to the *Vivid*, additional, for Pembroke Dockyard, temporarily; C. E. C. Stanford to the *Blenheim*; E. T. P. Eames to the *Terrible*, for voyage home; and D. V. Lowndes to the *Philomel*, on recommissioning. Surgeons: A. T. Rivers to the *Terrible*, and to the *Flora*, on recommissioning; J. Fullarton to the *Terrible*, and to the *Pioneer*, on recommissioning; F. R. Featherstone to the *Pembroke*, additional, for disposal; L. M. Morris to the Royal Marine Division, Plymouth; G. T. Verry to the *Lord Nelson*; G. O. M. Dickenson to Haslar Hospital; J. Bourdas to the *Terrible*, for voyage home; and W. E. Ormsby to the *Halcyon*, additional, for the *Skipjack*.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade Field Ambulance: Lieutenant Alexander R. Tweedie to be Captain (dated March 27th, 1909).

2nd Northumbrian Field Ambulance: Second Lieutenant Arthur Cecil Hays McCullagh, from the Unattached List, to be Lieutenant (dated April 1st, 1909).

1st Northern General Hospital: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel John Victor Walton Rutherford, from the 1st Northumbrian Brigade, Royal Field Artillery, to be Lieutenant-Colonel (dated March 30th, 1909).

Attached to Units other than Medical Units.—Lieutenant Samuel Martyn to be Captain (dated April 1st, 1908).

For Attachment to Units other than Medical Units.—Henry Michael Bayer (late Surgeon-Lieutenant, 5th (Irish) Volunteer Battalion, The King's (Liverpool Regiment)) to be Captain (dated May 1st, 1909). Douglas George Rice-Oxley to be Lieutenant (dated May 19th, 1909).

ROYAL ARMY MEDICAL COLLEGE EXAMINATION.

The following is the list of prize-winners at the recent examination at the termination of the junior course at the College:—Lieutenant H. S. Ranken, R.A.M.C., the Herbert, De Chaumont, Tulloch Memorial, Ranald Martin, and Marshall Webb prizes; Lieutenant J. A. Manifold, R.A.M.C., first Montefiore prize; Lieutenant C. L. Franklin, R.A.M.C., second Montefiore prize; Lieutenant A. M. S. Jukes, I.M.S., Parkes Memorial prize; and Lieutenant B. Gale, I.M.S., Fayrer Memorial prize.

3RD SOUTH MIDLAND FIELD AMBULANCE.

The medical profession of Bristol afforded some practical evidence of their sympathy with the 3rd South Midland Field Ambulance section of the Royal Army Medical Corps by subscribing for a drum major's staff, which was presented to the corps on July 9th by the officer commanding the South Midland Division, Brigadier-General H. A. Raitt, C.B. There was a large attendance, including Dr. R. Shingleton Smith, Mr. F. Richardson Cross, and Lieutenant-Colonel A. W. Prichard (commanding officer of the corps). Brigadier-General Raitt in an interesting speech said that the corps deserved special recognition on account of its being amongst the first in England to reach its establishment.

TERRITORIAL NURSING.

A meeting of the nursing committee of the Gloucester

Territorial Forces County Association was held on June 28th at the Royal Infirmary, Bristol. The Duchess of Beaufort, who presided, said that the committee had to provide a nursing staff for the 2nd Southern General Hospital, consisting of two matrons, 30 sisters, and 88 nurses. She explained that to volunteer for the service entailed no obligation unless and until the Territorial Forces were mobilised. Miss Baillie, the organising matron, said that she had received a good proportion of the necessary applications, and it was decided on her recommendation to enrol these.

THE ROYAL MILITARY (FAMILIES) HOSPITAL, SHORNCLIFFE.

On July 10th Princess Christian of Schleswig-Holstein opened the new Military (Families) Hospital at Shorncliffe. Major S. H. Fairrie, R.A.M.C., explained to Her Royal Highness that the hospital had been constructed to supersede the old wooden hospital which had been in use for the past seven years. The present building had been erected at a cost of about £10,000, and it would accommodate 35 in-patients.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 13th, Sir C. J. Thomas, K.C.B., being in the chair, the sum of £55 was distributed among the several applicants.

There will be an examination for the rank of staff-surgeon at Devonport on July 27th and 28th, from 10 A.M. until noon and from 2 to 4 P.M. each day.

Correspondence.

"Audi alteram partem."

THE RESTRICTION OF UNQUALIFIED PRACTICE AND THE SALE OF SECRET REMEDIES IN GERMANY.

To the Editor of THE LANCET.

SIR,—In spite of our enlightened times quackery is still rampant to an alarming extent. It is a psychological symptom that does not fit in with the boasted results of compulsory education and sixpenny editions of monistic theories, especially when we find that not only the "ignorant" but also many who by their training or position ought to know better, entrust the care of their health to persons whose methods savour more of the medicine-man of darkest Africa than of the exponent of those achievements that may well be termed the greatest and noblest fruits of man's ingenuity for the benefit of his fellow creatures. The action of the General Medical Council towards deleting this blot on our vaunted civilisation[1] should find the warm support of all who really profess to take an interest in their brethren's health.

As this question is likely to be prominently before the public, a *résumé* of the recent efforts made in Germany in this direction should prove of interest to those best placed to judge of the efficiency and likelihood of success of the measures to be taken. As stated in the report issued by the Unqualified Practice Prevention Committee of the General Medical Council, the position in Great Britain and Ireland is to a great extent similar to the conditions existing in Germany. The art of healing in Germany is free to all except pharmacists who may wish to pursue this calling, the only restriction being that potent drugs may only be dispensed upon a qualified practitioner's prescription. Recently, however, the numerous unfortunate results attending the effects of indiscriminate doctoring have led to legal proceedings, the law regarding such cases as coming within the scope of the paragraphs affecting "bodily injury caused by carelessness," and has meted out punishment accordingly. The Government of the Fatherland, ever mindful of safeguarding th [illegible] to accomplish this object [illegible] evils: secret remedies an [illegible] The imperial law for the regulation of the sale of secret remedies has been in force for some time. Briefly, it forbids the public advertisement of 153 preparations, or the inclusion of any testimonials or vaunting recommendations referring to the supposed curative properties of the preparation in question. Further, the pharmacist has to assure himself that no potent drugs are contained, which may be sold only on production of a qualified practitioner's prescription. A list of preparations has been elaborated, including a large number of the more known patent remedies, against which these regulations are specially directed. In Table B, which contains the names of 30 preparations which may only be dispensed upon a prescription, we find the following, amongst others: Tucker's asthma cure, Battle's bromidia, Blair's gout and rheumatic pills, Williams's pink pills, and Morison's pills. In the 123 articles in Table A which may be sold without a prescription, but to which the above restrictions apply, figure: Elliman's universal embrocation (excepting for horses), Mother Seigel's pills and syrup, Beecham's pills, and Ayer's sarsaparilla. The closing of the press as a medium for advertising was naturally a hard blow, and this is actively followed up by the publication of warnings against various other advertised preparations, which appear from time to time in local papers on behalf of the different municipal health boards. In spite of these measures it is officially stated that in the financial year of 1898-99 £1,500,000 were spent in Germany on secret remedies, while in the period from January to October, 1908, 31,200 kilogrammes were imported, paying £7800 in Custom dues, and 40,400 kilogrammes were exported out of Germany.

It is a regrettable fact to have to confess that these regulations have failed in their object—viz., of stamping out the "secret remedy nuisance," as it is termed in Germany, and this is very largely due to the attitude assumed by those for whose benefit they were elaborated. A love of the supernatural, impatience, and credulity are the great assets in favour of the vendor of the "cure all ills" preparation, and in many instances it would appear as if a special pride were taken in abetting him in eluding this law, which so many regard as being created for the pecuniary benefit of the physician. This negative result led to the elaboration of a proposed Imperial Bill to regulate unqualified practice, and to place the sale of secret remedies on a uniform basis throughout the empire. This project is at present under consideration at the hands of the governments of the various Federal States before discussion at no distant date before the Reichstag.

To absolutely forbid unqualified practice is held to be inopportune, but those persons who without possessing a legal qualification wish to practise the art of healing on man or beast as a business will be required to comply with the following conditions:—1. To inform the local police authorities in writing, at the latest on beginning to practise, of their dwelling place and business address; this applies equally to any change of address or alteration in the "working." (The word "Betrieb" places this "traffic" on a par with a factory or a railway line.) 2. "Tradespeople of the above kind" (*sic*) will, upon demand, be required to supply the police authorities with full information regarding their antecedents and personal circumstances, as far as affecting their trade, especially, however, regarding their education and previous occupation. They will also be required to keep business books, which must on demand be produced and laid before the police authorities. Paragraph 3 is the most interesting, as it strictly limits the scope of work open to the enterprising quacks ready to comply with the above regulations. They are forbidden to treat either man or beast without in person conducting an examination; this excludes treatment by letter. In dealing with human beings, the treatment of syphilis, gonorrhœa, or chancre by such person is prohibited; this also applies to treatment by means of mystic procedures, use of hypnotism, or of anæsthetics not having a purely local action. The police are empowered to stop the further treatment of persons suffering from contagious diseases on the schedule of one of the States; or of affections dangerous to the community at large. Permission to exercise unqualified practice may be refused, or [illegible] and further practice rendered illegal on [illegible] f facts can be adduced prov[illegible]rade is likely to be injurious to the health of man or animal treated, or liable to endanger life; (2) if the clients are exploited in a swindling manner; or (3) if the unqualified practitioner has been legally [illegible] for contravening this law.

[illegible] projected Bill deals with the sup- [illegible] and allied evils. Should it pass, the Federal Council (Bundesrat) will be empowered to forbid the sale *and importation* of any contrivances or articles intended to prevent, alleviate, or heal illnesses, sufferings, or bodily injuries in man or beast, if their use is likely to prove detrimental to health, or if they are marketed in a manner intended to deceive or exploit the purchaser. A special commission is to be appointed to deal with such questions. More than half of the actual wording of the Bill is devoted to an enumeration of the punishment provided to deal with offenders against its provisions. False representations respecting the value or effects of such preparations in public advertisements will make the advertisers liable to a penalty of imprisonment for a period not exceeding one year, in certain circumstances coupled with a fine up to £150, or either of these punishments may be inflicted alone. Imprisonment up to six months and a fine not exceeding £75, or either form of punishment alone, will be incurred by whosoever publicly offers to treat persons or animals by mail; publicly advertises or recommends remedies, articles, or methods intended to prevent, alleviate, or cure venereal diseases, remove sexual impotence, increase sexual appetite, prevent conception, or procure abortion. The same penalties will be provided for whoever publicly advertises or recommends remedies, &c., intended to alleviate, prevent, or heal illnesses, suffering, or bodily injuries in man or beast without clearly indicating the composition and proportion of the ingredients of the preparation or the material point in the method advertised.

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[1] THE LANCET, Jan. 23rd, 1909, p. 250

Unqualified persons, not registered according to this Act, who undertake upon payment to treat man or beast are liable to a fine not exceeding £7 10*s*. or imprisonment. Should such treatment be undertaken in a case where delay would prove dangerous no punishment will be inflicted, provided that the treatment lasts only until the aid of a qualified practitioner is obtained and is not of a nature forbidden to unqualified but "registered" persons. These are the principal offences, but punishments are included to be inflicted for minor transgressions against the provisions of the Bill. One paragraph (12) of the proposed law is interesting, as it further aims at shattering the foundation upon which the business of the manufacturer of secret remedies rests—publicity. When the press was closed to a section of these manufacturers by the law for the regulation of the sale of secret remedies to which reference has been made already, advertisements were sent through the post or distributed from house to house. But paragraph (12) of the Bill states that public advertisement in the sense of this law will also apply to the distribution of recommendations, letters of thanks, testimonials, and similar communications to a large circle of persons.

German medical opinion, although in favour of the proposed regulations, does not consider them to be stringent enough in view of the vital importance of the issue at stake. Yet they represent the utmost that the Government hopes to achieve when the Bill will be under discussion. As the elaboration of a highly civilised state they command the greatest attention and indicate the lines upon which one country is actively engaged in repressing unqualified practice and its kindred evils. One important postulate is the active coöperation of the public; will it be forthcoming in England as well as in Germany?—I am, Sir, yours faithfully,

Darmstadt. G. P. FORRESTER.

RELATION OF ACIDOSIS TO THE CARBON DIOXIDE OF THE BLOOD IN DIABETIC COMA.

To the Editor of THE LANCET.

SIR,—In your issue of June 19th you inserted a communication by Dr. A. P. Beddard, Dr. M. S. Pembrey, and Dr. E. I. Spriggs with the above heading. I ask you to be good enough to insert this letter in reply to the line of argument they have set forth.

The problem dealt with is the source of the occurrence of death in association with diabetic coma. To go back to the beginning, the matter was referred to in an article by me entitled, "On the Acetone Series of Products in Connexion with Diabetic Coma," that was published in THE LANCET of July 12th, 1902. In this article I gave an explanation touching the causation of death which was afterwards taken exception to by the above-named authorities. In my lectures on the Pathology and Treatment of Diabetes recently delivered at the Royal College of Physicians of London, and published in THE LANCET,[1] I criticised the line of argument they had put forth, and the present discussion emanates from what I felt it necessary to state. They adduce some experimental work in support of their contention, and draw from it deductions which, owing to their omission of a factor of consideration in connexion with the matter, I do not concede they are justified in doing.

The point at issue is the position in which carbon dioxide stands in relation to the fatal termination that occurs. We know that the production of carbon dioxide is intrinsically mixed up with living action, and that its removal from its seat of generation in the tissues is essential to the continuance of life. All admit that it is through the instrumentality of respiratory action that its removal is effected. The mechanism of removal works in an automatic manner. A special adaptability is given to the blood circulating through the tissues for taking on the generated carbon dioxide through the medium of the alkaline ingredients with which it is provided. Further, the muscular action concerned in pumping off from the lungs the carbon dioxide that has reached the blood and is designed to be discharged from the body is placed under nerve control, which affords a means of adapting the work to be performed to the variable requirements existing under the different circumstances that may chance to present themselves. These are the fundamental facts met with, and a failure anywhere in the performance of what is wanted suffices to lead to an arrest of living action.

In my lectures I say, "The continuance of life is dependent upon the elimination of the carbon dioxide produced as a result of vital activity. The sodic carbonate and, to a certain extent, the sodic phosphate, are the cardinal agents for conveying the carbon dioxide from the tissues to the lungs. If through any abnormality there should be an entry of acid into the blood, establishing what is known as a state of acidosis, the alkaline base will be appropriated by it, and thence be prevented contributing to the transport function as normally designed it should do." In unison with this view interference with the working of the respiratory mechanism in operation is regarded as affording sufficient to account for the fatal issue in connexion with diabetic coma without bringing into the question any assumed outside or extraneous cause.

My opponents have put forward some experimental results that they have obtained as controverting the view to which reference has been made. Let us see in what position they stand under the light of critical examination.

Their experiments, in effect, concur in showing that diabetic coma blood is not to be taken as exempt from absorbing power over carbon dioxide. They contend that if the wrong procedure in acidosis were due to non-removal of carbon dioxide from the tissues the blood logically should not be able to take it up. "So long as the body is alive," they say, "it will continue to produce carbon dioxide. Whenever the blood is unable to remove it as fast as it is produced, carbon dioxide must accumulate in the tissues, and if it accumulates then its tension in the tissues must be raised." The raised tension spoken of they consider ought to render itself evident, which they state is not found to be the case. Again, "if the 'alkalinity' of the blood begins to fall, and if carbon dioxide begins to accumulate at an increased tension in the tissues, the blood in the capillaries must be exposed to an increased tension of carbon dioxide. And although the reduced 'alkalinity' of the blood might prevent its taking up a normal quantity of carbon dioxide, nevertheless such gas as the blood did take up would be under an increased tension." As a matter of fact, they assert, the tension, instead of being increased, is much below the normal value.

Their argument is based entirely on the effects of gaseous tension. They completely ignore any other point of consideration in connexion with the matter. Nothing is anywhere to be found in their communication about any other factor being concerned in the question. I ask if this is permissible, seeing that both in the case of oxygen and carbon dioxide, combination—in the one case with hæmoglobin and in the other with alkaline basic material—constitutes an all-important item of consideration in connexion with the gaseous transport service performed by the blood.

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[1] Vide THE LANCET of Dec. 12th, 1908, p. 1727.

Obviously, when oxygen and carbon dioxide are respectively in their states of combination (whatever may be the precise degree of potency of combination that exists) they cannot exert the tension influence they are capable of doing when present in a free state Throughout, carbon dioxide is dealt with as though it were existing in a free state It is logical to infer that blood may be capable of taking up carbon dioxide when presented to it in a free state, whilst it may be incapable of doing so when it has to be dissociated from a pre existing state of combination Is it to be conceived that carbon dioxide as it is produced is thrown in a free state into the tissues? We know that it is produced, but we do not know the precise form of existence in which it first presents itself For my own part, however, I consider that it ought to be regarded as existing in some form or other of combination, and that a dissociation operation has to be performed before it reaches the blood

It is admitted that in advancing acidosis there is a concurrent descent in carbon dioxide elimination This falls in intelligibly with the view that, through the abnormal acid development, the alkaline basic material of the blood, becoming saturated with fixed acid, loses its transport power in connexion with carbon dioxide The *manner in which* the condition, even after it has advanced to the stage of coma, becomes rectified by the introduction of sodic carbonate into the blood equally tells in the same direction

My opponents, in commenting upon my view, fail to put it in a correct form They say, "This view is based upon the assumption that the decrease of carbon dioxide in the blood is primarily due to the inability of the blood to *combine* [the italics are mine] with more carbon dioxide than it is found to contain" The idea here conveyed does not strictly represent my contention. I hold that the blood with its lessened transport capacity an in its sodic carbonate content, source of its transport power, r dissociating and taking up carbon dioxide from the tissues, whilst still to a certain extent capable of taking it up when presented to it in a free form I consider the circumstances existing justify this conclusion, and that to escape from error the matter requires to be looked at not only from one but from all points of view.

The hyperpnœa that is associated with diabetic coma fits in with the view that I contend for in connexion with the matter under consideration I contend that it is owing to the respiratory mechanism being rendered ineffective that the result met with is attributable The object of respiration is to provide for an adequate supply of oxygen to the tissues and an adequate removal of carbon dioxide from them Let either of these operations be defectively carried out, and it will be found that the defectiveness shows itself by forced respiratory muscular activity being called into play in a manner representative of an effort of nature by compensatory action to set things right In the ordinary course of events when carbon dioxide is not being removed from the tissues to a proper extent increased respiratory movement is automatically induced by the effect of the condition existing (I put it in this broad way) upon the respiratory nerve centre This is exactly what is noticed in association with the state of breathing belonging to diabetic coma, and I consider that defective removal of carbon dioxide from the tissues is the rational factor to look to as standing at the foundation of what is observed We know that acidosis by its effect upon the sodic carbonate of the blood impairs the transport power of the blood for carbon dioxide We know also that the actual transport of carbon dioxide becomes correspondingly lessened as the acidosis advances, and if this lessening goes on it must necessarily follow that a point cannot escape being reached which is incompatible with the continuance of life There exists manifest evidence of default of respiratory efficiency, and death is to be satisfactorily accounted for without going outside the faulty respiratory capacity

Hyperpnœa is of itself indicative of the involvement of respiratory action in the issue It reveals the fact that the respiratory mechanism is not automatically meeting the existing respiratory requirement Douglas and Haldane, in an article on the Regulation of Normal Breathing published last month in the *Journal of Physiology* (Vol XXXVIII, No 5), have brought the question under consideration in connexion with the effect of forced muscular exertion They refer to the formation of lactic acid in the muscles as a result of excessive muscular work and to its leading to the production of hyperpnœa by its stimulating effect upon the respiratory centre A close parallelism is to be traced, from what they say about fall of carbon dioxide alveolar pressure, between the state thus induced by a call upon respiratory action that cannot at the moment be adequately met and the state associated with diabetic acidosis The respiratory capacity is in default from the excessive call in a direct manner made upon it in the one case, and may it not be rationally concluded that a similar state of default stands at the foundation in the other It is clearly made evident that *a low carbon dioxide alveolar pressure is not to be taken as* meaning absence of want of more effective removal of carbon dioxide from the tissues

Contending as I do that the view which refers the phenomena in diabetic coma to defective removal of carbon dioxide stands good, there is no need for seeking any other Dr Beddard, Dr Pembrey, and Dr Spriggs have reproduced in their article the view propounded by themselves and the comment made by me upon it in my College of Physicians' lectures As I have nothing further to say upon this matter, I leave it in the position in which it stands

I am, Sir, yours faithfully,
F W PAVY

WHO SHALL INSPECT THE SCHOOL CHILDREN?

To the Editor of THE LANCET.

SIR,—May I supplement your remarks in a recent leading article as to the respective merits of inspecting school children in county areas by (1) medical officers of health, (2) other local practitioners, and (3) recently qualified inspectors *ad hoc* Last first

This third system, you say, "makes for unity of method" I beg to deny it It gives temporary unity over width of area But the inspectors, with very few exceptions, soon tire of inspecting 50 children a day and writing up the records, £250 a year does not satisfy them for long, and they go The children they have seen are inspected by a different man on each triennial occasion By the time the new man has assimilated his method to that of his predecessor he also goes Nay, even the coordinator, the county medical officer, may go The unity is lost "It prevents, or should prevent, friction" On the contrary, it causes it Even if the young inspector have tact, he takes long to know local conditions, he may never meet the local medical officer of health, and misunderstandings are easy Several of his duties are also those of the medical officer of health, he will exclude contagious or infectious cases at his visit, but he must leave consequent action in their houses and school mainly to the medical officer of health and sanitary inspector Is this likely to secure efficiency or prevent friction? "Dual control must obtain in certain particulars—and the arrangement is not without some advantages" There can be no advantages in duality of control

The second system of employing local practitioners has the considerable advantage of making for unity in any one area over a length of time—longitudinal as opposed to lateral, chronologic to geographic, unity But if you suggest a different practitioner for each school, how am I to secure lateral unity over the 250 schools in Herts? If, instead, you suggest grouping of schools, the advantage of employing local practitioners is gone They will be inspecting each other's patients more than their own, they will not be in touch with the home conditions and parents of most of the children they inspect Medical practices are not *coterminous* with school areas And think of the friction then

The first system of employing medical officers of health seems to me for the counties the only one feasible in the long run, supplemented, if needs be for the present, by the help of one or two local practitioners in the larger areas Here is a compact body of chosen men, whose authority must already be recognised by their brother practitioners in regard to notification and sanitation Sufficient lateral unity is secured without difficulty, longitudinal unity is secured, for each child and each district, even should the county medical officer be changed Longitudinal unity is essential for the sake of the individual child, lateral for the sake only of statistics But the latter is of very slight—if, indeed, of any scientific—value in the comparison

Treatment is a different thing. The inspector gives the defective child a note to its parents to advise medical or domestic attention to a certain organ or condition of the body. Under the Children Act, 1908, Section 12, the parent is compelled to secure medical aid if required. But he gets it where he will, and no well devised system will give opportunity for influencing parents to leave their usual medical attendants. Above all, the employment of medical officers of health, the only body of men accustomed to consider prevention of disease in the mass, brings nearer the day, to which all authorities in public health appear to be looking forward, in which the medical inspection of school children will be a most essential part of the combined duties of medical officers of health uniformly, except in the large towns, throughout the country. Which system will best pave the way? I am, Sir, yours faithfully,

July 7th, 1909. F. E. Fremantle.

⁂ We feel that the very short experience of the inspection of school children which this country has had does not warrant anyone in speaking with Dr. Fremantle's emphasis. His statement (in which he denies the accuracy of our arguments) that medical inspectors will tire of their work, and that consequently the children will be continually inspected by new persons, is a prophecy the truth of which has yet to be gauged, especially as his words seem to carry with them the inference that the part-time medical officers of health, whose salaries are often quite small, will never tire of their work. We think that Dr. Fremantle overstates the claims of medical officers of health as experts in the "prevention of disease in the mass," and is generalising a little fearlessly from the position in Hertfordshire, which county is after all laterally, longitudinally, and geographically of limited area.—Ed. L.

INSTRUCTION IN ANÆSTHETICS FOR DENTAL STUDENTS.

To the Editor of The Lancet.

Sir,—The President of the College of Surgeons of England sees no objection to the publication of the accompanying correspondence; I should feel obliged therefore if you could find room for it in your next issue.

From the reply of the College I think it is apparent that, as far as general anæsthetics are concerned, the recent regulation is intended to apply only to the administration of nitrous oxide. I am, Sir, yours faithfully,

J. Fredk. W. Silk.

Devonshire-street, Portland-place, W.

[Copy.]

July 7th, 1909.

To the President of the Royal College of Surgeons of England.

Dear Sir,—Our attention has been drawn to a regulation lately issued by the Council of the Royal College of Surgeons, by which, after October 1st next, candidates for the diploma "L.D.S." will be required to receive "a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery."

As teachers of anæsthetics at some of the principal medical schools in London we take the liberty of pointing out to you that this particular phrasing (in common use, &c.) has already been understood in some quarters to include such substances as ethyl chloride, ether, chloroform, and the chief local anæsthetics.

We can hardly believe that this interpretation was in the mind of the Council when the regulation was originally framed, for it is obvious that, if so interpreted, many dental students would, on the strength of such instruction, claim the right to administer chloroform and other drugs; a possibility which in our opinion would be highly objectionable [illegible] the Council will see its way to issuing a [illegible] the instruction is to be confined to the [illegible]

[illegible] remain, yours obedient[illegible]

J. Blumfeld, [illegible] Hospitals.
C. C. Braine, [illegible]
T. G. A. Burns, Middlesex.
R. Gi[illegible], St. [illegible]
R. J. [illegible]
G. Rowell, Guy's.
J. F. W. Silk, King's College.

[Reply.]

Royal College of Surgeons, Lincoln's Inn-fields, W.C.,
July 9th, 1909.

Gentlemen,—I am desired by the President to inform you that he submitted your letter of the 7th inst. to the Council at their meeting yesterday, and that in reference thereto the Council adopted the following resolution, viz.: That the signatories to the letter be informed that the regulation to which they refer was adopted by the Council after full consideration of the different views which have been expressed regarding the administration of anæsthetics, and that the Council are not prepared to admit that the general anæsthetics specified by the signatories are "in common use in Dental Surgery," and must adhere to their decision.

I am, Gentlemen, your obedient Servant,
S. Forrest Cowell, Secretary.

TUBERCULOSIS DURING THE FIRST YEAR OF LIFE.

To the Editor of The Lancet.

Sir,—It is hardly yet sufficiently realised that tuberculosis is a common affection during the first year of life and not infrequent in the first six months. The following statistics, kindly collected for me by Miss A. Sanderson, of a series of infants of this age recently under my care in the Belgrave Hospital for Children, show this very clearly. Total number admitted, 501; total number of deaths, 219; post-mortem examinations, 127; number found tuberculous, 17. Of these infants there were in the first three months of life, 2; second three months, 3; third three months, 6; fourth three months, 6. The youngest child was a girl of seven weeks with tuberculous bronchial glands. Holt found tuberculosis in 26 under six months (5 under three months), 31 in the second half year of life, and 32 between two and five years. Still gives figures, based on 500 consecutive cases, as 22 and 60 for the two half years, and 130 in the second year of life, as against Holt's 39 in the second year. If cases of tuberculous meningitis are taken we find such statistics as: 14 out of 67 under one year (Holt), 3 out of 63 (Oxley), 18 out of 130 (Still). Of 54 cases under five years, which I collected two years ago, 10 were under one year, and of these 3 were under six months. Of the 17 cases, 9 were miliary tuberculosis, 2 miliary tuberculosis and meningitis, 2 meningitis, 1 pulmonary tuberculosis and meningitis, 1 pulmonary tuberculosis, 1 tuberculous broncho-pneumonia, and 1 tuberculous bronchial glands.

The difficulty of obtaining accurate details of the previous diet renders any conclusions as to the mode of infection open to error. A boy, nine months old, who died from miliary tuberculosis, was said to have been breast-fed until five days before admission. A girl of 12 weeks had had cows' milk for a week, and her mother was probably tuberculous. A boy of nine months had been fed on various articles of food but no cows' milk; his father recently had died from "bronchitis." Two girls of five and six months had been partly bottle-fed; their fathers probably were phthisical. Another girl of nine months had a phthisical sister. A breast-fed girl of eight months, who died from tuberculous broncho-pneumonia, lost her father a week previously from phthisis. A boy of ten months, who had tuberculosis of the right lower lobe, was said to have been entirely breast-fed for nine and a half months. A child of four months was breast-fed for three months and then on the breast with Nestlé's milk and milk-and-water in addition; his mother suffered from "chest." In the other eight cases the possibility of infection through cows' milk was greater.

These few cases indicate the frequency of tuberculosis in the first year of life and the probability that many of them are due to direct infection from a phthisical relative. What is wanted is a careful record of cases in the better classes of life, showing exactly what the possibilities of infection from another or by milk may be. Provided that an infant is brought in contact with a phthisical nurse or relative, it is infinitely more probable that subsequent tuberculosis is due to direct infection rather than to the milk-supply.

I am, Sir, yours faithfully,
Edmund Cautley, M.D. Cantab.,
Physician to the Belgrave Hospital for Children and to the Metropolitan Hospital.

Upper Brook-street, July 8th, 1909.

SYMMETRICAL LIPOMATA OF THE BROAD LIGAMENTS.

To the Editor of The Lancet.

Sir,—In the course of the pathological examination of the appendages in a case of ovarian fibroma and multiple fibroids of the uterus, removed from a woman, aged 51 years, by Professor H. Briggs, to whom I am indebted for the material, the condition of symmetrical lipomata of the broad ligaments was found. The tumour on the right side was a flattened ovoid, of the size of a broad bean, lying between the layers of the broad ligament at the posterior aspect of the fimbriated end of the right Fallopian tube. It was soft in consistency, and on section presented the characters of a fatty tumour. The tumour on the left side was somewhat less flattened, and contained two minute thin-walled clear cysts; *in size and position it corresponded* closely with the tumour on the opposite side, and, except for the small cysts, was of a uniformly fatty nature. Microscopically the lipomatous nature of the tumours was fully established, together with the demonstration, in the tumour of the left side, of a columnar epithelial lining to the small cysts, suggesting an origin from Kobelt's tubules. Lipomata of the broad ligaments are so rare as to excite interest; the occurrence, however, of symmetrical lipomata in this situation is perhaps sufficiently uncommon to warrant publication. The tumours from their position and size must have been symptomless, but whether, as suggested by Hektoën, a trophic influence played a part in their etiology, it is not easy to determine.

I am, Sir, yours faithfully,

E. EMRYS-ROBERTS, M.D. Liverp.,
Demonstrator of Pathology, University of Bristol;
late Subcurator of the Pathological Museum,
University of Liverpool.

July 9th, 1909.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I am much annoyed to find that certain daily newspapers have published portions of an article of mine which appeared in the *Practitioner* of this month. My permission was not asked for this proceeding, and, if it had been, would certainly have been refused.

This unwarrantable liberty is a sad example which too clearly illustrates the decay in good manners of the British daily press, which has now reached the low level of the American daily press. I think that, with some obvious exceptions, for the public press to discuss medical questions in their columns is a serious impropriety.

I am, Sir, yours faithfully,

July 9th, 1909. DYCE DUCKWORTH.

THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—Dr. Alexander Brown in THE LANCET of July 10th discusses the paper of the above title communicated by Dr. F. W. Hewitt and Dr. J. Blumfeld. He points to an apparent discrepancy between the authors' dictum in regard to the method of administration and the earlier writings of one of them (Dr. Hewitt), and he asks for guidance. As one who has in the past taken much interest in the study of inhalation methods, I may perhaps be able to throw some light upon the subject.

It is, I think, imperfectly appreciated how vastly different results may be obtained in accordance with simple variations in the technique of administration of anæsthetics on an open mask. I know from personal experience how one is liable to criticise the qualities of a particular sample of anæsthetic whilst overlooking the important bearing of the qualities of the method by which it is given. If a frame of the Skinner or Schimmelbusch type, covered with lint or closely woven flannel, be held so that it does not touch the patient's face, then it is not unusual to find that such mixtures as the A.C.E. or C.E. will not be efficient in inducing anæsthesia. If, however, the framework be adapted to fit closely but lightly upon the face, and the covering be formed of a loosely woven fabric, such as domette or a thin flannel, then an entirely different set of conditions regarding evaporation is set up. The respirations in this case pass wholly, or almost wholly, *through* the meshes of the fabric and not merely *over* its surface, and in this way a perfectly efficient concentration of vapour may be inhaled. It is indeed thus that the open ether method is rendered practicable, and it is from neglect of this simple principle that it fails.

This adaptation of frame and cover has a further highly important bearing upon the continued administration of vapours, for it presents the most favourable conditions under which the vapour strength may be regulated. By varying the proportional part of the total area of fabric (e.g., one-quarter, one-half, &c.) which is moistened with the anæsthetic, the percentage of vapour inspired is made to vary in accordance. The relation is certainly not in direct proportion, but it is sufficiently close to afford a greater control than may be effected by any way of using other forms of masks, either open, such as the ordinary Skinner's, or semi-open, such as the Rendle cone. There is also a decided objection to the inflated rubber pad which is fitted to the semi-open inhalers. In the absence of special precautions this is liable to induce a degree of obstruction to free respiration, and the substitution of a lightly resting metal frame results in a far happier type of breathing.

The open method of administering anæsthetics is capable of still more precise adjustment, and I think that the plan which I devised of using the A.C.E. mixture upon an open cover divided into four actual quadrants may be found to prove more efficient in less expert hands, but for a further account of these matters I may refer Dr. Brown to my papers in the *British Medical Journal* of August 4th, 1906, and Oct. 6th, 1907, p. 874.

Of the relative merits of the C_2E_3 mixture I have never had any personal experience, but I may perhaps be allowed to express the hope that Dr. Hewitt and Dr. Blumfeld will have success in their advocacy of a method which, of its kind, I am convinced will tend to afford the widest efficiency.

I am, Sir, yours faithfully,

London, W., July 13th, 1909. A. GOODMAN LEVY.

DELAYED CHLOROFORM POISONING.

To the Editor of THE LANCET.

SIR,—I was very interested to see the account by Dr. T. O. Somerville of the cases of delayed chloroform poisoning in THE LANCET of July 10th as I have had a somewhat similar experience, although fortunately my cases did not terminate fatally. Case 1 was a patient to whom chloroform was administered for a difficult delivery. The patient was under the anæsthetic from about three-quarters to one hour and nothing abnormal was noted during the administration, but as she was recovering consciousness she vomited up a coffee-coloured material; this continued to be vomited for about four or five hours and then ceased and she made a good recovery. Case 2 was a child to whom A C E. was administered for the removal of enlarged tonsils and adenoids. This was the worst case and vomiting continued for three days and was very severe. The vomit in this case was coffee-coloured and great prostration and exhaustion followed She recovered after careful treatment. Case 3 presented features practically identical with Case 1, but A C.E. was the anæsthetic administered, and the vomiting *did not occur till four hours after the return to consciousness.* I have satisfied myself that these cases were due to the use of a cheaper chloroform, acetone chloroform, for they occurred during a period when I was using this chloroform, thinking it reliable and feeling satisfied that it was cheaper; but I discontinued it and again used the purest chloroform, and no further cases of the kind happened.

These cases occurred in general practice and I have not full notes of them, but the cases reported *seemed to resemble* my own; and I thought it might be of interest to make a report of them.—I am, Sir, yours faithfully,

W. H. PAYNE, M R.C.S. Eng., L.R.C.P. Lond.

Vesta-road, Brockley, S.E, July 11th, 1909.

AN APPEAL.

To the Editor of THE LANCET.

SIR,—We beg to appeal to the readers of this journal for help in the sad case of the late Mr. O E. Harris, Ph D. He was for over four years the demonstrator of chemistry to the Royal Institute of Public Health, during which time he rendered faithful and valuable services both to the institute and to sanitary science by his teaching and research work. Although delicate and greatly handicapped through a serious spinal deformity, the result of an accident in early childhood, he continued cheerfully and bravely in his work. Even during his last illness he was at work until a few days before his death, which occurred on May 31st last.

He has left a widow and six children between 12 and four years old totally unprovided for. Whilst endeavouring with the kind help of friends to obtain the admission of the children into suitable institutions, we are collecting a fund to provide for the urgent necessities of the family during the next few years. Any contributions sent to either of us will be gratefully received and acknowledged in this journal by

Yours faithfully,
CARL PRAUSNITZ, M.D. Breslau,
(Assistant Bacteriologist to the Metropolitan Asylums Board,
late Demonst [illegible] Royal Insti-
tute of P[illegible] " Grove-

N. H. TURNER, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H.
(Demonstrator of Public Health to the Royal Institute of Public Health), 35, Highbury-grove, London, N.
July 10th, 1909.

A SYSTEM OF DIET AND DIETETICS.

To the Editor of THE LANCET.

SIR,—May I say at once I am quite in agreement with Dr. Cautley that a brief article on a system of diet cannot be expected to include all the minutiæ of its subject. At the same time I would assert that however brief the description may be it is indisputably necessary, if the diet is to be prescribed intelligently, that it shall include and correctly describe prominent essentials, such as those which I criticised in my last letter. I refer to quantity and number of meals.

With regard to quantity, I mentioned that a minimum of nearly 11 ounces of meat a meal was unduly large for the majority of cases, and it will be noted that Dr. Cautley, although with evident reluctance, now inclines to my opinion, since he says, "It is possible to give the food in *four* meals of eight ounces each, *or to start with smaller quantities* and gradually increase them up to the full amount" (the italics are mine). I may here reciprocate Dr. Cautley's compliment to my mathematical ability by admiring the way in which he has added on another meal per day and so accommodated meals to quantity. Unfortunately, however, in adding on another meal, he has forgotten that Salisbury repeatedly emphasised "*five hours must elapse between meals,*" so that the hapless patient under Dr. Cautley's *régime* would have to partake of this fourth meal somewhere about midnight.

Turning to my second criticism, Dr. Cautley makes no attempt to justify his fairly weighty error of omission in not referring to the number of meals, nor, as already noted, to the interval which should elapse between meals, although a correct appreciation of both is indispensable to success. Surely Dr. Cautley cannot expect even the ablest practitioner to correctly guess these factors, yet, if he does not, I fail to understand how he can justify his assertion, "It does not need a high order of intelligence to understand the principles of the diet as laid down." I may, however, be doing Dr. Cautley an injustice; perhaps he includes these essentials with "the minutiæ of treatment which are not required."

With regard to exponents, I am glad to say I cannot refer Dr. Cautley to any, if by exponents he means men who exclusively practise the treatment. If, however, he refers to physicians who limit its application to carefully selected cases—the only way in which this or any other system of diet should be used—I can refer him to two whom I know do not use the quantities he mentions. In the meantime, may I support my remarks by referring Dr. Cautley to that admirable and accurate article on the subject in Dr. Burney Yeo's "*Food in Health and Disease,*" from which I quote the following extracts:—

(1) *Begin with 1 to 2 ounces* at each meal, and increase gradually to 3 to 4 ounces, and then to 5 to 6 ounces, and then to 8 ounces or more if it is well and easily digested.

(2) Five hours between each meal.

I am, Sir, yours faithfully,
Wimpole street, W., July 10th, 1909. ERNEST YOUNG.

JUNE SUNSHINE IN GUERNSEY.

To the Editor of THE LANCET.

SIR,—The accounts of the weather in England during June have been such dismal reading that it may be interesting to state that during the month 232 hours of sunshine have been recorded in Guernsey. From the beginning of the year until the end of June the total of sunshine was 1032 hours.

I am, Sir, yours faithfully,
HY. DRAPER BISHOP.
Health Office, Guernsey, July 6th, 1909

MANCHESTER ROYAL INFIRMARY.

(FROM OUR MANCHESTER CORRESPONDENT.)

THE STORY OF THE MANCHESTER ROYAL INFIRMARY.

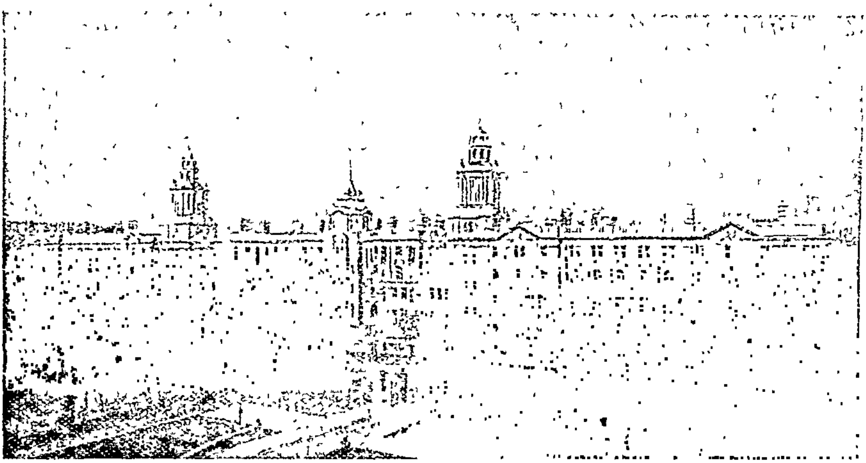
THE Manchester Royal Infirmary, founded in 1752, has grown from small beginnings to the magnificent hospital which the King and Queen have so recently honoured. The old infirmary, during its sojourn in Piccadilly of over 150 years, underwent many transformations, which may be traced in various old prints, and which always took the form of enlargements of the previous building, until the grave and somewhat sombre edifice still dominating Piccadilly was found to cover as much of the open space as was desirable on hygienic grounds. The pressure on its accommodation for patients has for years been growing more and more severe, and the necessity for enlargement more urgent, so that various schemes, some for rebuilding on the old site, others for moving to a new one, have been considered and rejected in the course of a controversy which has been proceeding for 30 years or more. The subscribers at last instructed the board of management to obtain plans for rebuilding, but when these were submitted they declined to pass them. Lastly, in 1902, a new board was elected with instructions to provide a new hospital on a new site. A member of the old board, Mr. John Thompson, was elected chairman of the new one, and took the chief part in the sale of the old site to the corporation, but his death in 1904 terminated his invaluable services to the infirmary. He was succeeded by the present able chairman, Mr. (now Sir) William Cobbett, who has had the help of Mr. Charles Hopkinson as chairman of the building committee. As was to be expected, various sites were suggested, but that chosen in Oxford-road was presented by the trustees of the late Sir Joseph Whitworth to the University of Manchester for hospital purposes. The University has made additions to this site by purchase, increasing its extent to nearly 13 acres.

The medical and surgical requirements of the new hospital were laid down by the medical board after careful consideration, while the administrative requirements were specified by the late general superintendent, Mr. W. L. Saunder, the whole being further considered in detail by the board and embodied in the instructions to competing architects. Mr. J. J. Burnet, F.R.I.B.A., was architectural assessor, and he recommended the plans of Mr. Edwin T. Hall, V.P., R.I.B.A., and Mr. John Brooke, F.R.I.B.A. They were, with some modification of detail, adopted, and the splendid new infirmary is the result. The accommodation is ample for 592 patients and 339 resident officers, nurses, and servants. The equipment and furnishing have been a heavy task, carried out mainly by Mr. Saunder's successor, Mr. Walter G. Carnt, whose ability and knowledge have been greatly appreciated by the furnishing committee. The cost of the buildings and equipment, purchase of part of the site, redemption of chief rents, and interest on bank overdraft, &c., has been approximately £500,000. In addition, about £25,000 will be required for a central city branch for the immediate treatment of minor ailments and accidents. The annual expenditure of the new infirmary, the central branch, and a yearly contribution to the maintenance of the Barnes Convalescent Home at Cheadle is estimated at £34,500. The £400,000 from the corporation have been supplemented by some smaller sums and by generous contributions from private persons, so that the new infirmary is free from debt at this its most auspicious opening. The infirmary has given of its best, not only to Manchester and Salford, but to a district extending from Barrow in the north to Crewe in the south, so the area to which it may appeal in its turn is a wide one, and it may surely be anticipated that the whole district will help to maintain the new infirmary sufficiently well to enable it to continue its beneficent work.

The new Manchester Royal Infirmary consists of 48 separate blocks of buildings. The principal frontage is to the west, looking across Oxford-road to the Whitworth Park, on the north it fronts to Nelson-street, to the south is York-place, and there is a back entrance from a street on the east of the hospital.

Entering from Oxford-road the visitor finds in front of him a four-storeyed block with wings at each side, the administrative block, containing the offices of the general superintendent's department, a large board room, the resident medical officers' dining-room, the medical board room, and

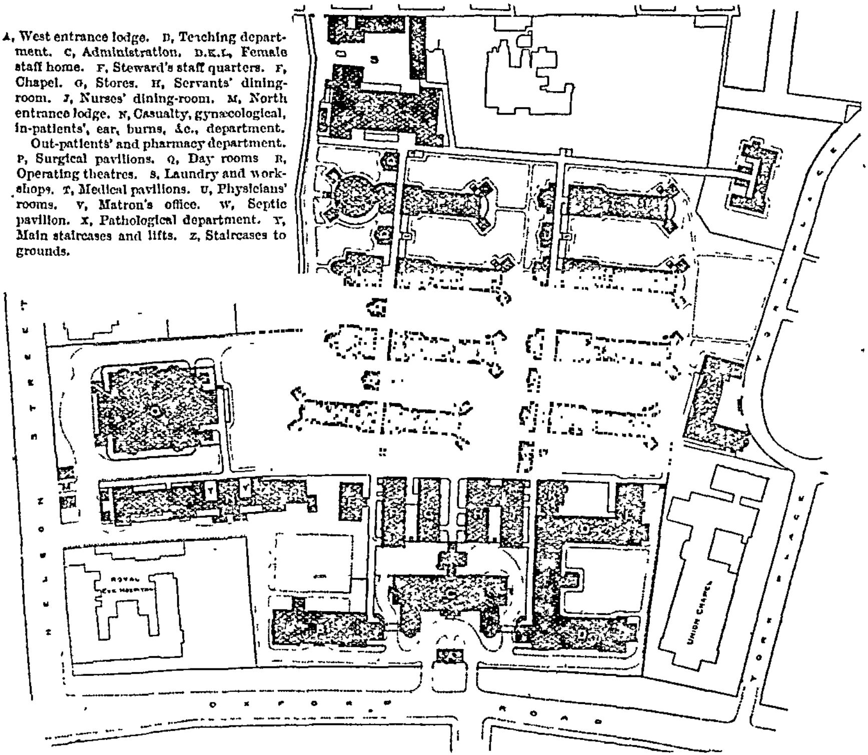
FIG. 1.



Manchester Infirmary: the Oxford-road façade from the south-west. (Warwick Brokes, Manchester.)

FIG. 2.

A, West entrance lodge. B, Teaching department. C, Administration. D.K.L, Female staff home. F, Steward's staff quarters. F, Chapel. G, Stores. H, Servants' dining-room. J, Nurses' dining-room. M, North entrance lodge. N, Casualty, gynæcological, in-patients', ear, burns, &c., department. Out-patients' and pharmacy department. P, Surgical pavilions. Q, Day rooms R, Operating theatres. S, Laundry and workshops. T, Medical pavilions. U, Physicians' rooms. V, Matron's office. W, Septic pavilion. X, Pathological department. Y, Main staircases and lifts. Z, Staircases to grounds.



Manchester Infirmary: Block plan standing on about 13 acres of land (reproduced from the prospectus of the institution the committee room. Residential quarters for the general superintendent, lady superintendent, and medical officers occupy the first and second floors, while those for the domestic servants are on the fourth floor. Three staircases provide for suitable division and for safety in case of fire. The flat roof can be used for a promenade. To the right, or south, is the nurses' home, and in the back sections are bedrooms and sitting-rooms for the ward-maids and laundry-maids. There is ample provision of bathrooms and lavatories. On the left is the teaching block, containing cloak-rooms and common rooms. A large lecture room and museum occupy the main part of the upper floors. The roll of names of the honorary staff from 1752 is recorded in the large entrance hall. Going east from the administrative block by the central corridor the storekeeper's department and the servants' hall and dining-room are on the left and right respectively, with the kitchen department above. The kitchen, 60 feet long by 35 feet wide and 29 feet high, is one of the finest rooms in the hospital, and is lined with glazed bricks. When the hospital is fully occupied meals for nearly 1000 people will be cooked, so that the large kitchen is necessary. There are no fires, for everything will be cooked by gas or steam. There are cold rooms for meat and milk, and all kinds of ingenious arrangements for doing work and saving labour. The food will be taken in special wagons along the covered ways, and up or down lifts as required to the different wards. The patients will all enter the hospital through the Nelson-street entrance. Out-patients will turn to the left, entering through a vestibule (seated for 60) the large waiting-hall, passing the hospital office, which is between the two. This hall is 92 feet long, 41 feet 6 inches wide, and 28 feet 6 inches high, and seats 400. It has a glazed lining and concrete floor and can be readily washed out by a hose-pipe and squeegees. The dispensary is at the end. There is a refreshment counter where a cup of tea, &c., can be obtained at a moderate charge. The consulting-rooms are at each side and there is a small operating theatre. Casualty cases are dealt with in a block to the right. Ambulances can be unloaded under cover on the level of the examination room. In the basement of this block are rooms for electrical and X ray work, massage, and medical baths. Above the casualty department are the gynæcological wards. In the centre of this block is the entrance to the in-patients' admission room, and at the south end of it are wards and an operating theatre for aural cases, while over them is a special ward for burns. A covered way along the side of this block, 756 feet in length, extends to the south boundary of the site, and from it two covered ways turn at right angles; to the east staircases from these give access to the wards above, the north to the surgical and the southern one to the medical wards, while branches to the west connect various blocks together. All the internal traffic of the hospital is under cover. The sides of these passages are enclosed to the height of four feet only, so that though they are protected from the weather by an overhanging roof the air has free access, and satisfies modern requirements as to free air spaces between each part of the hospital. Under the covered ways are subways in which all the principal heating, hot-water, steam, gas, and cold-water pipes are laid, and also electric mains and telephone wires, so that they can be attended to without interfering with the regular traffic of the hospital. The wards are on the pavilion principle, with spaces of 60 feet between them. Five of the ten pavilions are surgical, while four are devoted to medical cases. Five are of three storeys and the other five of two storeys, thus giving 25 large wards. Each pavilion runs north and south, and each large ward receives direct sunlight. The distance from the administrative centres of distribution is reduced to a minimum. The subdivision of internal traffic for goods and staff lessens noise and confusion. The distance from main thoroughfares, together with the intervening buildings, minimise external noise, and in this respect among others there is a great improvement on the state of things in the old infirmary at Piccadilly. Each pavilion has an open-paved basement and is separated from the ground. The wards are grouped in units. Each medical unit has two large wards on the same floor, one of 22 beds for males, and one of 18 beds for females, together with a few small wards, ward kitchens, store and linen rooms, two day-rooms, and *physician's room.* As pavilions run nearly north and south, the beds are on the east and west sides of the wards, and at the south end there is a balcony where, if the weather allows, the patients can enjoy the sunshine. The sanitary arrangements in the detached towers at the south-east and south-west corners deserve examination by experts. The wards are heated by hot-water radiators, and a supply of fresh air, regulated by a valve, enters at the back, is warmed by the hot surface of the radiator, and passes into the ward. On the sides where the male and female wards face each other a new window glass is used, which is transparent and smooth, and yet is sufficiently obscured. The floors have linoleum laid on the smooth concrete, and there are no square corners for the lodgment of dirt. The "Gilmour" doors, except where there are glass panels, are flat and smooth on both sides, and indeed every care has been taken that the environment of the patients should be absolutely cleanly. The surgical wards are similar to those on the medical side, but each of the five groups contains two male wards of 16 beds each and one female ward of 20 beds, while small one- or two-bed wards bring the total up to 60. A separate block to the north of the covered way contains the operating theatre and its accessories on the same floor. A small gallery for students is cut off from the operating part by a plate-glass screen seven feet high to interrupt dust, but not to prevent a clear view or the sound of the surgeon's voice. The theatre walls are lined with Sicilian marble to a height of seven feet, and above that with "reconstructed marble," and the ceilings are glazed with opalite. The floor is of "terrazzo."

The remaining buildings are the mortuary and pathological laboratory and lecture room; the isolation block for septic cases; the laundry; the lodges, in Oxford-road, Nelson-street, and Berlin-street; the matron's office; a residence for male servants; and a carriage shelter. Another building is the chapel, which will seat about 200. The drainage is divided into many sections, thoroughly ventilated, and the soil drains are flushed by rain-water, which is carried to the different flushing tanks. In this way the cost of flushing with town's water is avoided. The cold-water service is taken from three separate corporation mains, each of which can serve any part of the hospital, so that a breakdown in the supply can scarcely occur. In like manner the electric supply is taken from separate corporation generating stations to the main switch-boards, and the light in each pavilion is divided between the two separate sources of supply, so that a total failure of light is very unlikely to happen. Without going into tedious details, it is safe to say that all contingencies seem to have been foreseen and provided for. The amount of thought that has been given to the plans generally and to every conceivable arrangement for securing sanitary conditions throughout the whole of the buildings must have been enormous, and they represent the combined product of most acute and earnest minds directed to one object—that is, to the alleviation of the suffering and pain of the sick poor.

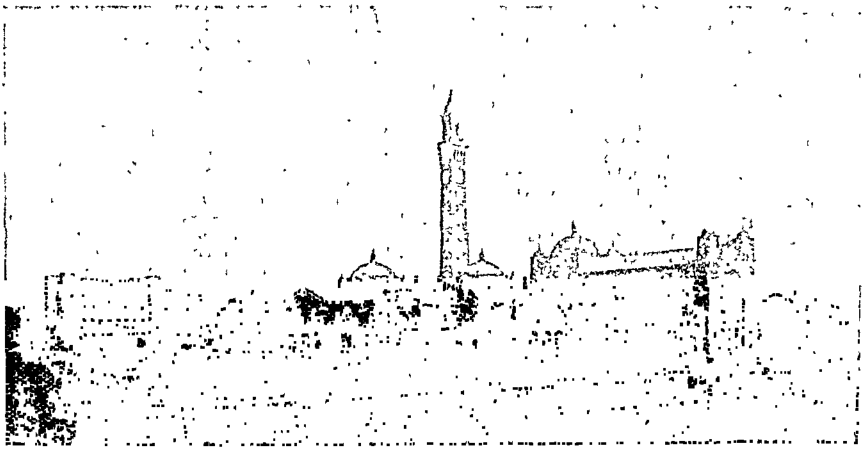
BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The New Buildings of the University.

ONLY those who have seen the buildings, formally opened by the King on July 7th, have any idea of their magnitude or of the grandeur of the plan which is being gradually developed. The present buildings, magnificent in themselves and splendidly equipped, are even now in many respects unique, but when circumstances are favourable other blocks will be erected until the whole is complete and as near perfection as possible. For the present, equipment, endowment, and the extension of teaching and research are the foremost necessities, and the departments not yet provided for at Bournbrook must continue to work in their more or less cramped quarters in the old buildings; but the time must come ere long when it will be no longer possible to accommodate zoology, botany, geology, anatomy, and physiology in their present quarters, and money will have to be found for the erection of the additional blocks at Bournbrook, which will complete the original plan and furnish accommodation for the sciences which are so closely associated with those at present housed in the new buildings. There can be little doubt that eventually the various departments of the Faculties of

Arts and Commerce will also be transferred to Bournbrook. We shall then possess the beginnings of a university of which the Midlands may well be proud. It will possess imposing buildings surrounded by their own gardens and athletic grounds, and will be within easy reach of manufactories, mines, hospitals, and business establishments, where the practical application of scientific training can be demonstrated and studied. The interest already taken in the university by the people of the city and the immediate neighbourhood is indicated by the fact that during the last three days of the past week, when the new buildings were thrown open to the public, 155,000 people availed themselves of the opportunity to inspect the various laboratories and class-rooms.



Birmingham University: the Bristol-road façade. The central groups of buildings are the mechanical, civil, and electrical engineering laboratories. The building to the left is the chemistry school, and that to the right, beyond the great hall, is the mining and metallurgy laboratory. (Photograph supplied by Messrs. Whitlock.)

The Graduation Ceremony.

The graduation ceremony which took place in the town-hall on July 3rd was, as usual, an occasion for the display of pretty dresses and hats by the ladies, of wonderful and multi-coloured gowns by the graduates, and for the creation of much noise by the undergraduates. One of the striking features of the ceremony was the number of women graduates, who were especially numerous in the Faculty of Arts.

The Death of Professor Bridge.

Although the friends and colleagues of Professor T. W. Bridge had noticed with deep concern that he appeared to be far from well and was rapidly losing strength, nevertheless the somewhat sudden and fatal termination of his illness came as a surprise and a shock, for up to a comparatively recent date he had been taking an active part not only in the work of his own department but in connexion with the rearrangement of the curriculum necessitated by the removal of the schools of physics and chemistry to Bournbrook. He was a genial, helpful, and kind-hearted colleague who will be much missed by those with whom he has been associated for so many years, and particularly by the members of the Medical Faculty with whom he always had the most cordial relations.

The New Professor of Surgery.

Professor Jordan Lloyd's appointment to one of the chairs of systematic surgery will be very popular, for he is a great favourite with the students, whom he rules and guides with a strong hand, both in the hospital wards and the University classes. Hitherto he has been professor of operative surgery, but when Professor Bennett May resigned his chair of systematic surgery the council of the University requested Professor Lloyd to take the vacant place and he accepted the invitation, his acceptation necessitating the resignation of the position he previously held. His new appointment will give greater scope for his energy and ability, but it will also make much greater demands upon his already very fully occupied time.

Fire at the General Hospital.

Early on Monday morning last an outbreak of fire in the switch-room at the General Hospital was the cause of much inconvenience, but fortunately of only little damage. The first indication of anything wrong was given by a sudden flickering and then by the complete extinction of the electric lights. The men in charge, finding the outbreak in the switch-room, at once closed the lift and so cut off the basement from the hospital wards and corridors. On the arrival of the fire brigade the outbreak was soon extinguished, but the lighting could not be restored, so the buildings remained in darkness during the early hours before day-break, and as the electric fans were powerless the plenum system of ventilation had to be replaced by regulating the opening of windows.

The St. John Ambulance Brigade.

The members of the St. John Ambulance Brigade were much in evidence on the occasion of the King's visit to the City and University, and they performed a very useful function, which must otherwise have devolved upon the already overburdened police force, for they gave first aid to 563 cases, of whom about a dozen were removed to hospitals. Each member of the corps was equipped with complete first-aid dressings, and each squad of four men was supplied with a surgical haversack, a stretcher, and a squad water-bottle. The men looked smart, and they did their work quickly and well.

The Health of the City.

The cool weather of this remarkably sunless summer is proving beneficial to the public health. Our medical officer's last report shows that during the week ending July 10th the general death-rate fell to 10·6, the lowest rate recorded since August, 1907, and two lower than any rate recorded last year. The zymotic death-rate was 1·1. There were seven deaths from measles, and only one from scarlet fever.

July 13th.

A MEMORIAL TO SIR MORELL MACKENZIE.—The Leyton Urban District Ratepayers Association has arranged to affix a memorial tablet to the birthplace of Sir Morell Mackenzie, 742, High-street, Leytonstone, at the corner of Browning-road. The tablet will be unveiled on Monday, July 19th.

BRISTOL AND THE WESTERN COUNTIES.

(From our own Correspondent.)

The University.

The University machine is at work. During the past few days its principal governing bodies have met for the first time and transacted important business. On Wednesday, July 6th, the first court met; about 200 members were present, the Bishop of Hereford, as the oldest Pro-Chancellor, taking the chair in the absence of the Chancellor, Mr. H. O. Wills, through ill-health. Dr. Percival, in his opening remarks, spoke of the lasting indebtedness in which Bristol was placed, through its University, to the families of Wills, Fry, and Thomas. He gave a brief account of the developments which culminated that day in the court's meeting, developments which have been described in one of these letters. He reminded his hearers of the many great names which had already been associated with University College: Professor Marshall, Sir William Ramsay, Professor Sylvanus Thompson, Professor Sydney Young, and Professor Hele Shaw. Allusion was also made to the efforts of the Colston Society, and to the recently arranged union with the Society of Merchant Venturers. In concluding, he proposed 12 members of the court as representatives of that body upon the University Council. This proposal was seconded by the Right Hon. Henry Hobhouse, who spoke of the benefit which not Bristol only, but also the whole West of England, must hope to derive from the new centre of light and leading. The Right Hon. Lewis Fry moved that the seal of the University be affixed to an agreement with the Society of Merchant Venturers relating to the equipment and administration of the Faculty of Engineering. This motion was seconded by Mr. G. W. Davey, Master of the Society of the Merchant Venturers. The next motion was to the effect that all Members of Parliament for divisions of the counties or boroughs within the counties of Gloucester, Somerset, Wilts, Dorset, Devon, and Cornwall shall be members of the court. (The terms of the motion expressly excluded the Members for the four divisions of Bristol, who are *ex-officio* members of the court.) This was moved by Mr. M. W. Colchester-Wemyss, chairman of the Gloucestershire Council Council, and seconded by Mr. F. A. Hyett, chairman of the Gloucestershire education committee. Professor Turner brought a kindly message of greeting from the University of Oxford, and the Bishop of Bristol performed a like office on behalf of the University of Cambridge, and Professor Lloyd Morgan, Vice-Chancellor of the University, acknowledged the helpfulness of their words and of the support which the older universities had always been ready to give. He also remarked upon the existence of a Bristol medical school for many years before the foundation of University College. On Friday, July 9th, the Senate of the University met and elected six of its members as representatives on the Council. Two of these are professors in the Faculty of Medicine, Professor E. Fawcett (anatomy) and Professor J. Michell Clarke (medicine). Immediately after this the first meeting of the Council was held, the Right Hon. Lewis Fry being elected chairman. Professor Lloyd Morgan tendered his resignation of the Vice-Chancellorship, as he found the work belonging to that office so arduous as to hinder the prosecution of psychological research. Sir Isambard Owen, Principal of Armstrong College, Newcastle-on-Tyne, was appointed in his place. Other business transacted by the Council related to the transfer *en bloc* of the teaching staff of the University College to the University; to the formation of the engineering staff; to the purchase of Clifton Hill House as a hall of residence for women students; to the purchase of certain adjoining property; to certain matters relating to the purchase of the Blind Asylum premises; and to questions concerning the arms, seal, and mace of the University. Both in Senate and in Council motions were adopted appreciating Professor Lloyd Morgan's long and arduous labours on behalf of University education in Bristol. It is indeed a matter for deep satisfaction that the new University will still have his advice and guidance without prejudice to the scientific investigations by the fruits of which he will doubtless contribute yet further to its lustre as a seat of learning. The University will be universally felt to be fortunate in securing so distinguished a successor to the important office of vice-chancellor, the academic head. Sir Isambard Owen's experience in the development of universities is very great. He was instrumental in the foundation of the University of Wales, of which he is Deputy Chancellor, and since that time he has been actively concerned in the reconstruction of the University of Durham. His appointment to the Bristol vice-chancellorship is to date from Sept. 9th.

The Hospital Sunday Fund.

The final report of the council shows that the total sum collected for the past year is £1898 17*s.* 4*d.*, an increase of £39 10*s.* 6*d.* upon the previous year. Of this total, £1817 4*s.* 8*d.* have been distributed, the principal grants being £739 10*s.* to the Royal Infirmary, £620 10*s.* to the General Hospital, £239 10*s.* to the Children's Hospital, and £110 10*s.* to the Eye Hospital.

The Late Mrs. Markham Skerritt.

By the will of Mrs. Markham Skerritt, who died recently, the Bristol General Hospital receives £1000, the Bristol Blind Asylum £1000, and the University £1000 (less any sums paid during her lifetime) towards a fund for the establishment of a "Markham Skerritt" chair of Anatomy. Mrs. Skerritt, who was blind, survived her husband by about two years, their only child (a daughter) having predeceased her parents.

A Medical Officer of Health for Somerset.

At a meeting of the Somerset county council held last week it was decided by a large majority to adopt the recommendation of the sanitary committee and appoint a medical officer of health for the county who should also act as chief medical inspector of schools. The salary will be £700 per annum, rising to £800 by yearly instalments of £20, this remuneration to be exclusive of reasonable travelling and office expenses.

The Exeter City Asylum.

The annual report of the visiting committee of the Exet City Asylum, which has just been issued, states that durin 1908 448 patients had been under treatment, and that 33 remained in the institution on Dec. 31st. During the yea there had been 88 discharged and 33 deaths. The financi statement was satisfactory and showed that there had bee a profit during 1908 of £1394, which had been paid to th borough fund of the city.

The Sewage of Bath.

At a meeting of the Bath city council held on July 6t the sewage disposal committee recommended the council apply to the Local Government Board for sanction to borro £215,000 for new sewerage, pumping station, and main ar disposal works. This will provide for the sewage of population of 80,000 inhabitants. After some discussi the report was adopted with only three dissentients.

The Western Consumptive Hospital, Torquay.

It has been decided to carry out extensions at the Wester Consumptive Hospital, Torquay. The cost of the undertakin will probably be about £2000.

Witchcraft in Somerset.

At a conference of teachers held at Bury, near Dulverto on June 26th Mr. G. F. Sydenham in an interestin paper stated "that herbalists and white witches were stil living among them, to say nothing of 'The Doctor' o seventh son. The belief was widely held that whooping cough could be cured by placing the sufferer on th ground in a sheep-fold; epilepsy by procuring silver coin from friends and having them made into a necklace o bracelet to be worn by the sufferer; and hæmorrhage an burns by the chanting of a strange prayer. A seventh son, especially if he were the seventh son of a seventh son, was as much sought after in some parishes as if he were a Harley street specialist. His patients were attended on Sunday mornings after fasting, the cure being by touch and prayer."

July 13th.

LEEDS.

(From our own Correspondent.)

Death of the Marquess of Ripon.

By the death of Lord Ripon Yorkshire has lost one of her most eminent sons and the University of Leeds its first Chancellor and its most loyal and consistent supporter. It would be difficult indeed to think of any movement concerned with the University or with the steps that led to its institution, which was not a matter of deep concern to Lord Ripon, and which his ripe judgment and energy did not help to carry to a practical issue. He was among the number of those who assisted the Yorkshire College at its very commencement, and on the death of Lord Frederick Cavendish he was selected as Principal of the Yorkshire College. A generous donor to the funds of this educational institution, he did more than merely give money. Of his best energies he was lavish, and he must ever stand out conspicuous even among the many who have helped to bring about the realisation of the dreams and hopes of those in Leeds interested in University development.

Health Congress in Leeds.

For some time it has been felt that the holding of two simultaneous annual congresses, one connected with the Royal Sanitary Institute and the other with the Royal Institute of Public Health, was leading to a form of division of labour which was antagonistic to real work. Happily, as the result of mutual discussion, these two associations have accepted the invitation of the City and University of Leeds to hold a joint congress in Leeds in place of the usual two. So far as can be gathered the meeting is likely to be very successful. The Congress is fortunate in having as President, in the person of Colonel T. W. Harding, a former Lord Mayor of Leeds, a sanitary expert, an admirable chairman, and a man of wide culture and public spirit. On Monday, July 19th, the Lord Mayor, Alderman F. J. Kitson, will preside over a conference of municipal representatives and sanitary inspectors within the walls of the University, and a joint meeting will be held of the sections of bacteriology and chemistry and engineering and architecture. During the rest of the week there will be numerous sectional meetings concerning which some deta [illegible] your columns. The section [illegible] presided over by Dr. Arthur Newsholme, of the Local Government Board. On Wednesday morning an address will be given in the University by Dr. G. Newman, principal medical officer of the Education Department, and in the evening Sir C. A. Cameron, C.B., will give a lecture with experiments on "Ground Air." On Thursday Dr. B. A. Whitelegge, chief inspector of factories, will give an address on Industrial Hygiene. In the section on preventive medicine discussions will be held on the prevention of tuberculosis, the protection of food-supplies, on hospitals and segregation, on infantile diarrhœa, and on the educational aspects of a municipal milk-supply. The section on child study will be presided over by Sir James Crichton-Browne. Mr. William Hall, who, during the last few years, has supplemented the work of his long experience as a practitioner and inspector of factories by devoting a large amount of his leisure to the work of the feeding of children, will read a paper on the bearing of diet on the physical development of Aryan and Semitic children born and bred in Leeds. Professor A. S. F. Grünbaum, who presides over the section of bacteriology and chemistry, will give an address on his subjects, entitled "Ramparts of Health." A reception will be held in the Art Gallery by the Lord Mayor and on Monday the University holds a conversazione in the building of the medical school. On Saturday a congregation of the University will be held for the purpose of conferring honorary degrees on Colonel Harding, on Sir James Crichton-Browne, and on Major Ronald Ross, C.B.

July 13th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The New Out-patient Department at the Royal Infirmary: Laying the Foundation Stone.

THE Earl of Derby laid the foundation-stone of the new out-patient department of the Royal Infirmary on July 7th, in the presence of a distinguished gathering, when the chair was occupied by Sir William Tate. Prior to the ceremony his lordship was presented by Mr. Ralph Brocklebank, the chairman of the committee, with a silver trowel. At the close of the proceedings visitors were invited to inspect the hospital and to partake of refreshment in the entertainment room. In architecture and material the new building will closely resemble the hospital. On the ground floor ample and suitable accommodation will be provided for medical and surgical patients. The large hall, 75 feet by 35 feet, open to the top, will have seating accommodation for 250 people. On the first floor provision will be made for the special departments—women, eye, throat and ear, and in the basement for venereal, skin, and massage departments. The committee is of opinion that everything desired for the efficient and economical working of the department will be secured. The accommodation set free in the present building will be most advantageously utilised for the reception of casualties and the provision of special beds, which are urgently needed. Although the cost of the bare fabric is assured, £25,000 having been already promised or subscribed, there is still a great deal of money to be raised to complete the work, which is estimated to cost about £30,000. The cost of maintenance is another item which will have to be faced by the committee. The average number of out-patients treated at the Royal Infirmary during 1908 exceeded 80,000, the work being much handicapped owing to the inadequacy of space available in the infirmary. It is estimated that the maintenance of the new out-patient department will require a sum of £1500 a year.

The University of Liverpool: Degree Ceremony at St. George's Hall: Ex-officio Degrees.

Following upon the results of the University of Liverpool examinations recently announced, the ceremony of conferring degrees upon the successful students took place on July 10th, at St. George's Hall, in the presence of an audience which was both numerous and representative. The function was performed by the Earl of Derby, the Chancellor of the University. It is interesting to note that amongst the recipients of *ex-officio* degrees were Mr. William Thelwall Thomas, associate professor of surgery at the University, and Mr. Robert Jones, surgeon to the Royal Southern Hospital, each receiving the degree of Master of Surgery.

July 13th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

Durham University College of Medicine.

THE question of the constitution of the College of Medicine has been discussed on former occasions in these columns, and it is interesting to note the completion of the adopted scheme for reconstruction in the occurrence of the first meeting of the Court of Governors of the College on July 7th. The management of the College is now to be vested in three bodies—viz., the Court of Governors, the Council, and the Academic Board. The Court of Governors consists of elected, representative, and contributory governors, and at present numbers between 70 and 80. The Council, which has charge of the executive work, is made up of seven members elected by, and out of, the Court of Governors, seven from the Academic Board, and seven more—two representing the Senate of the University, the principal and two members of the council of Armstrong College, and two representatives of the house committee of the Royal Victoria Infirmary. The representative governors are sent from the various municipal, educational, and other authorities in the district. The Academic Board is made up of the professors and lecturers of the College, and its functions are purely educational and disciplinary.

Amongst those present at the court were Professor Sir George Hare Philipson (President of the College), Professor Sir Thomas Oliver, Professor R. P. Ranken Lyle, Professor R. Howden, Professor H. J. Hutchens, Professor Phillips Bedson, Professor H. Stroud, Dr. David Drummond, Dr. A. J. Collis, Dr. C. R. Stewart, Dr. J. T. Merz, Mr. J. Rutherford Morison, Mr. Cecil Cochrane, Mr. A. F. Ericsson, Mr. R. E. Lambton, and Alderman Newton. Sir G. H. Philipson was unanimously elected chairman, and Councillor W. J. Sanderson vice-chairman; Mr. Cecil Cochrane was appointed treasurer of the College, and the following governors were elected to sit on the council:—The Very Rev. the Dean of Durham (warden of the University), Lord Ravensworth, Professor Bedson, Mr. C. A. Cochrane, Alderman J. Cromie, Mr. J. E. Gibson, and Dr. Clement Stephenson.

It may be of interest to give briefly the progress of the College and the reasons for changing its constitution. The medical school was founded in 1832 and was called the Newcastle-on-Tyne School of Medicine and Surgery, and the work was carried on in two rooms—one for the lectures and a small one for the lecturer's use. The first lecturers were George Fife, John (afterwards Sir John) Fife, Alexander Fraser, Samuel Knott, and H. G. Potter. The number of students on the first register was eight. The number of the teaching staff has now reached four times that of the commencement and the students on the register last winter were 202. During the first 20 years of its existence the school was not in connexion with the University of Durham and students had to take up residence at Durham in the University in order to proceed to a degree in medicine at the University. In 1852 new arrangements were made by which attendance at the school in Newcastle was considered as equivalent to residence at Durham (for the purpose of the medical degree), and so a great difficulty for the student was removed. Up to the present time the business and other affairs of the College have been arranged by a council consisting of the professors and lecturers with three representatives of the Senate of the University, the addition being made a couple of years ago of several prominent public men. In spite of this, however, it was felt that the public and the public bodies should be brought more closely into touch with the College and its administration, and the scheme which has now been adopted was broached. It remains to be seen, of course, what the results may be, but there can be no manner of doubt as to the wisdom of such a step. The mode of representation on the Court of Governors has been carefully dealt with so as to be representative of all the educational and other authorities in the city, more especially of the Armstrong College, where the first year medical student takes out most of his classes, and the Royal Infirmary, where his clinical work is done in the third, fourth, and fifth years. Under the old constitution the College has had a markedly successful life, and it is hoped that the innovation in the management may lead to even better work.

That the school has many advantages can be seen from its geographical situation between Leeds and Edinburgh, the enormous opportunities for clinical work in a general hospital which drains a large area; further, the reports of the inspectors of the General Medical Council state that the examinations of the University of Durham are of a high standard; and finally, the increasing number of the students is an excellent indication. Altogether it is a most desirable thing to incorporate the representatives of the various public bodies and prominent laymen, for after all it is from the layman that real support of every kind must eventually come, and there has latterly been some little tendency for the training for the high profession of medicine to be neglected as opposed to the support given to purely technical instruction, as judged perhaps by the more immediate results derived from the support of the latter.

July 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Finlayson Memorial Lectureship.

Sir Hector C. Cameron, on behalf of the committee of subscribers to the fund in memory of the late Dr. James Finlayson of Glasgow, has presented a deed of gift to the Council of the Faculty of Physicians and Surgeons of Glasgow, conveying to the Council the future management of the fund. The income from the fund is to be held and applied as the endowment of a lectureship to be called "the Finlayson Memorial Lectureship." The selection of lectures is vested in a committee consisting of the president, the visitor, the honorary librarian, and the honorary treasurer of the Faculty for the time being, the present professors of the practice of medicine and of pathology in the University of Glasgow and their successors in their present chairs, and Dr. Andrew Freeland Fergus, who was closely associated with the movement in favour of the fund. The lectures are to deal with some part of pathology or the practice or history of medicine, and will be duly advertised. They will be delivered in Glasgow, possibly every third year, but at least every fifth year, and will be open to all registered medical practitioners and such other persons as the Council of the Faculty may think proper. The first lecture under the management of the original committee was given in February, 1908, by Dr. Norman Moore of London, who lectured on the "Schola Salernitana," its History, and the Date of its Introduction into the British Isles.

Death of Dr. T. Brown Henderson.

The death took place last week of Dr. Thomas Brown Henderson, one of the oldest medical practitioners in Glasgow. Dr. Henderson, who had reached his eighty-first year, was well known among the members of the profession and in connexion with several philanthropic institutions, with the work of which he was for many years closely identified. He was a native of Lanarkshire, and so long ago as 1851 he qualified as a Licentiate of the Faculty of Physicians and Surgeons of Glasgow. Three years later he became a Fellow of the Faculty. His medical studies were continued at the University of Aberdeen, where he graduated M.B. in 1856, and two years later took the degree of Doctor of Medicine. A few months ago Dr. Henderson was laid aside owing to illness, and, though he partially recovered, his health was seriously impaired. Among the institutions and movements of a philanthropic character with which Dr. Henderson was more intimately associated were the Glasgow Dental Hospital, Ear Hospital, and Medical Mission.

Management of Ruchill Fever Hospital.

More than a year ago it will be recollected that owing to reports of overcrowding and also of friction between the members of the staff in Ruchill Fever Hospital a commission was appointed by the Local Government Board to inquire into the state of matters. The commission made several suggestions to the health committee of the corporation with a view of putting things on a more satisfactory basis. Since that time some have thought that friction still continues, and recently a petition signed by 18,000 citizens was presented to the corporation "to appoint an independent inquiry into the administration of the Ruchill Hospital from the date of the Local Government Board inquiry up to the present date, and requesting that the parties carrying out the said inquiry consist of citizens from the following bodies—viz., three from the Faculty of Physicians, three from the Faculty of Procurators, three from the Merchants' House, and three from the Trades Council, with a neutral chairman." A special committee was appointed by the corporation to consider the petition. The committee has now made its report and directs attention to Section 5 of the Public Health (Scotland) Act, 1897, under which the Local Government Board for Scotland is constituted the central authority in respect of all matters affecting public health, including the administration of infectious disease hospitals. The committee therefore has recommended that the petition be transmitted to the Local Government Board.

Death of Dr. Robert Morrison, Methlick.

The announcement of the death of Dr. Robert Morrison of Methlick will be received with very sincere regret by all who knew him. Dr. Morrison, who belonged to the New Deer district, was in early life associated with farm work. He afterwards studied medicine at the University of Aberdeen and graduated M.B., C.M. there in 1887. Subsequently he started practice in Methlick and very soon gathered together a very large practice. Of a retiring disposition, he was yet ready at all times to render assistance ungrudgingly, taking a keen interest in all that pertained to the welfare of the neighbourhood. As a member of the School Board he rendered good service, and he was also a punctual office-bearer in the parish church. His widow and family will have the sympathy of the entire community.

The Medical Inspection of School Children: Scheme for the County of Aberdeen.

A meeting of the Aberdeenshire secondary education committee was held on July 9th, when a sub-committee submitted a scheme for the medical inspection and supervision of school children under the Act. The scheme suggested a practical amalgamation with the public health department of the county, Dr. Watt being appointed as chief medical officer. The committee, however, did not accept this scheme and resolved to appoint a chief inspector with a salary commencing at £300 and rising by annual increments of £20 to £400. It was also resolved to appoint an assistant at a salary commencing at £200, and rising by annual increments of £25 to £300. This scheme will be submitted to the school boards in the county and to the Scotch Education Department. A conference of the school boards will be called to consider the proposal after it has been circulated.

The Sidlaw Sanatorium: Annual Meeting.

The annual meeting of the directors of the Sidlaw Sanatorium was held on June 29th. The directors in their ninth annual report stated that it was disappointing to the directors to find that the claims of the institution, which the citizens of Dundee at its opening agreed to maintain, were not being met, and that the year's working showed a deficit amounting to £309 7*s*. Dr. A. K. Traill, the medical superintendent, in his report stated that he had endeavoured to trace those patients who had been discharged with the disease arrested since the opening of the sanatorium. The following table showed the after-results in those cases whose history he had been able to obtain:—

	Alive.	Dead.	Working.
Year ending April 30th, 1904	5	5	5
" " " 1905	10	7	10
" " " 1906	25	10	22
" " " 1907	23	5	20
" " " 1908	37	0	32
" " " 1909	37	0	33

The Lord Provost, in moving the adoption of the report, referred to the intentions of the late ex-Provost Moncur in founding the institution. It was perfectly evident, continued the Lord Provost, that the conditions on which Mr. Moncur's gift was accepted had not been carried out by the citizens of Dundee. It seemed to him that the only hope of the good work being continued was cooperation with the public health authority in Dundee. With this object the town council had appointed a committee to consider how the public health authority could work in conjunction with the directors and supply a sufficient number of selected cases paid for from the public rates. The report was unanimously adopted.

July 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Increase of a Dispensary Medical Officer's Salary.

IT is gratifying to be able to call the reader's attention to an act of relative generosity to a dispensary medical officer, coming from a board whose conduct in the treatment of another has been criticised rather severely. At the weekly meeting of the Castlerea board of guardians on July 3rd a motion to increase the salary of Mr. P. C. Walsh was brought up for discussion. Mr. Sweeny, whose notice of motion had been placed before the board a fortnight previously, pointed out that not a single complaint had been lodged with that board during the whole period of Mr. Walsh's 30 years of service. The seconder of the motion pointed out that Mr. Walsh's work was not confined to one district of the union, but was spread over the whole; while some of the worst cases were brought in there for treatment. The general good feeling of the meeting was soon shown in the fact that although, as was to be expected, one member tried to cut down Mr. Sweeny's proposed increase (£30) of salary to £20, the half-way sum of £25 was unanimously voted. Those who know the district know how thoroughly Mr. Walsh deserves his popularity.

Belfast and the New Tuberculosis Act.

At a recent meeting of the Public Health Committee of the Belfast corporation the medical officer of health submitted a report dealing with the new Tuberculosis Ireland (Prevention) Act which came into force on July 1st. He thinks the prescribed circumstances and the prescribed form of tuberculosis to be included in the compulsory notification of this disease, as now defined, are of too limited a nature, surrounded with restrictions, and dependent on the discretion of those in attendance, so that they may lead to disappointment. Many persons hold this view. But I may recall the fact that the cases to be notified are those of tuberculosis of the lung "so circumstanced that they are likely to prove a means of distributing the disease unless precautionary methods are adopted." He thinks, owing to the limited scope of the Act, that if adopted in Belfast there will only be obtained by the Act of Parliament what is already obtained voluntarily through the action of the dispensary medical officers of Belfast in notifying all cases of phthisis admitted to the Belfast union. A further source of information available to the Belfast health authorities was supplied by persons seeking admission to the corporation beds in the Forster Green Consumption Hospital. Now, in reply, it may be said that there are only 14 dispensary medical officers in Belfast, a city with a population of 370,163 inhabitants, and 30 beds alone available for the corporation at the consumption hospital. The medical officer of health thinks the fact that 1213 cases were dealt with during the past year shows that these two sources of information have been productive, but if we turn to his last report—that for 1907—we find that 926 deaths occurred from phthisis and 469 from other forms of tuberculosis—that is, 1395 in all. Now, taking the phthisis cases alone (926 deaths) and multiplying them by ten to arrive at the number of living persons suffering from the disease, which I consider is a very moderate estimate, it would show 9260 patients with active pulmonary tuberculosis, and yet according to this scheme of voluntary notification in Belfast only 1213 were dealt with. The medical officer of health further objects to the expense in working the Act. He says that during the years 1899–1908 the average number of deaths registered as having been caused annually by this disease was 1054, and that the fees alone for the first year, provided all cases were notified, would amount to £1317 10*s*.; further, there will be the expense due to an increased clerical and sanitary staff. The medical profession is to be paid for doing work in regard to an infectious disease—phthisis—as it is with regard to any other notifiable malady, and the stamping out of a disease which alone causes more deaths than all the other infectious zymotics put together is a work of true economy. If the medical officer of health could see his way to advise his committee to adopt the Act, and proceed gradually to put its clauses into work, we might hope to see some improvement in dealing with a disease which has an appalling influence on the death-rate of Belfast.

Whiteabbey Sanatorium.

At a meeting of the Belfast board of guardians held on July 6th the best thanks of the guardians were voted to Mr. Robert Hall "for the manner in which he had conveyed to the guardians such a clear and accurate account of the work done by the medical and nursing staff of the sanatorium during the past half-year."

The late Thomas McIlroy.

Deep regret is expressed in the surrounding district at the death of Dr. Thomas McIlroy, which occurred in sad circumstances at his residence at Newtownards on July 6th. When cycling home on the evening of July 2nd, after visiting a patient in the county, a collision took place with a horse and trap, the result being that Dr. McIlroy was thrown violently to the ground and received a transverse fracture of the skull. He was at once rendered unconscious and remained so until hi[illegible] at Queen's [illegible] University [illegible] L F P.S.G. [illegible] about 29 years ago, and while residing there he had by his skill, extreme amiability, and genial disposition built up a large practice which included many of the leading families in the district. He was deeply interested in every movement that had as its object the advancement of the interests of Newtownards. He was medical attendant to the police and to the Post Office officials, and was civil surgeon to the troops of the 4th Battalion of the Royal Irish Rifles. He was buried at Movilla Cemetery on July 8th. Much sympathy is felt for his widow and only child, Mr. Hugh McIlroy (who is a promising medical student), in their great trial and bereavement.

July 31th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

International Congress of School Hygiene.

THE Third International Congress of School Hygiene will meet in Paris during Easter week in 1910—namely, from March 29th to April 2nd. All civilised countries have formed committees and will send representatives. It is evident that the movement for improving the hygienic conditions of primary and secondary schools (*de l'école et du lycée*) will become important. There will be three discussions and 30 papers read in the sections by French and foreign contributors. Inquirers can obtain full information from the general secretary, M. Dufestel, 10, Boulevard Magenta, Paris.

Traumatic Detachment of the Superior Maxilla.

At a meeting of the Surgical Society held on June 23rd M. Ferraton described two cases of fracture (*fracture par disjonction*) of the superior maxilla in which this bone was completely separated from its osseous attachments. The cases came under his notice last year; in each of them the injury had been caused by the kick of a horse, and the detachment of the superior maxilla was as complete as if a surgical operation had been performed for its removal. This lesion required for its production a very violent blow directed obliquely on the lower portion of one of the maxillary bones near the dental arches. Consolidation of the bones was followed by stricture of the lacrymal canal. The diagnosis was obvious and the displacement was easily reduced under an anæsthetic, but it returned immediately if a fixation apparatus was not applied.

Toxicity of Cancerous Extracts.

At a meeting of the Society of Biology held on June 26th Madame Girard Mangin showed that toxic substances were present in cancerous extracts obtained from tumours which had not undergone suppuration and were treated aseptically; the tumours in question occurred both in the human subject and in the lower animals, and moreover grew both in epithelial structures and in the connective tissue. These toxic substances reduced the blood pressure and the body temperature; they might produce paralysis, and when administered in fatal doses they gave rise to convulsions. They generally caused death by stoppage of the respiration, the heart continuing to beat. Animals which did not yield at once to the action of these cancer toxins became ill and died in a state of profound anæmia without appreciable lesions. The toxic qualities of these extracts were, she thought, more useful than histological examination in elucidating clinical phenomena.

Treatment of Acne Rosacea.

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on June 24th M. Jacquet described the case of a man who had for 20 years suffered from acne rosacea in a form so incredibly severe that the skin of his face became converted into a kind of sponge containing pus. Under appropriate treatment he completely recovered in two months. His habitual dietetic system was anything but conducive to health, for he drank much wine, ate hurriedly, was partial to acid substances, and read during meals. Massage of the face was ordered and in some weeks he was not only freed from the acne but was also no longer troubled as before with dyspepsia, giddiness, and transient disorders of vision.

Some Effects of White Swelling of the Knee.

At a meeting of the Society of Paris Surgeons held on June 18th, M. Barbarin said that the abnormal alignment of the leg in white swelling of the knee was often due to hyperplasia of the femur and the tibia, especially at the level of the epiphysis. This hyperplasia extending to the whole epiphysis caused lengthening of the limb and distortion on flexion. If it was localised in the internal condyle it caused genu valgum. These deformities were usually transient, and the examination of them must include radiographic inspection as well as the noting of clinical details. Conservative treatment gave excellent results if it was gentle, continuous, and not based upon a vain expectation of rapid recovery. In white swelling of the knee the power of movement ought to be regained, he thought, in about 50 per cent. of the cases under well-devised treatment.

Congress of Social Hygiene.

A Congress of Social Hygiene met at Agen on June 25th, M. Jules Siegfried, vice-president of the committee of social hygiene, being in the chair. M. Siegfried spoke of the benefits resulting from what had been done for the promotion of public hygiene and morality; he also referred to the advantages of domestic sanitation as carried out by the English and Americans.

Mercurial Stomatitis caused by Grey Oil.

At a meeting of the Société Médicale des Hôpitaux held on June 18th, when cases of severe stomatitis were being discussed, M. Gauchen spoke of the dangers of grey oil and recommended the use of soluble salts of mercury. M. Balzer said that the danger was due not to the grey oil but to the wrong use which was made of it. Some practitioners injected it in such large doses (*par centimetres cubes*) that accidents were to be expected. Using it with prudence M. Balzer had not seen any ill-effect during the last 25 years. He no longer employed calomel because it caused pain, but grey oil was not open to this objection. M. Mosny said that bottles (*ampoules*) of grey oil, each containing 40 centigrammes of mercury, were on the market—a detestable system, for some practitioners believed it necessary to inject the entire contents of a bottle at once with the result that the patient suffered from mecurial poisoning. M. Queyrat said that he had already pointed out the danger of this mode of treatment; he had, however, used grey oil without accident for many years and was quite satisfied with it.

The Casimiroa Edulis, a New Hypnotic.

At a meeting of the Therapeutical Society M. A. Robin and M. Cayon have communicated the results of their investigations on the Casimiroa edulis or *zapote blanc*. This plant, which belongs to the rutaceæ, was, they said, an excellent hypnotic. When the hydro-alcoholic fluid extract of the seeds was given in doses of one or two teaspoonfuls it produced two or three hours afterwards a natural sleep lasting from five to six hours and not followed by headache or a sensation of fatigue. Being harmless, it might be given to aged persons suffering from renal troubles and it would be very serviceable in nervous diseases. Pathological alterations of the muscular fibre of the heart contra-indicated it.

Treatment of Intermittent Claudication.

At a meeting of the Academy of Sciences M. Moutier pointed out recently that sclerotic lesions of the arteries of the lower limbs might cause two kinds of morbid phenomena. If the ischæmia was incomplete the result would be intermittent claudication, a purely functional disorder long known in the horse but first described in the human subject by Charcot. If the ischæmia was complete the result was gangrene, almost always preceded by intermittent claudication. M. Moutier has seen several patients, some in the stage of claudication and others more advanced, in whom the use of d'Arsonvalisation, either local or general, brought about a considerable and permanent improvement. In particular, one patient who was the subject of arteriosclerosis recovered from an early stage of gangrene of both feet.

Women and the Bachelor's Degree.

The Superior Council of Public Instruction has recently rejected a motion to exempt women desirous of following medicine or pharmacy from taking their bachelor's degree Their exemption from military service already places women at an advantage, against which a good many medical students and practitioners are beginning to protest. It has even been suggested that the two years of military service should be replaced by two years of some such employment as sick nursing, which should be compulsory to medical women, either during their student days or after their qualification.

July 14th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Conditions Predisposing to Longevity.

Dr. v. Lindheim, a writer well known for his researches on sociology and on what may be called "folk-medicine," recently communicated to the Gesellschaft der Aerzte the results of his observations on a series of 700 persons of both sexes, who had reached the age of 80 years and upwards This memoir, which has now been published in a separate form, appears to be the most exhaustive investigation of its kind on the subject. The occupation, the religious persuasion, and the family history of the individual are given in each instance. His observations have led Dr. Lindheim to the conclusion that instances of longevity are most often met with among persons who have been born in wedlock; whose parents and grandparents have been healthy, and especially if they have been long-lived; who have in infancy been breast-fed either by the mother or by a wet-nurse; who have studied regularity, punctuality, and temperance all through life; and who have postponed their retirement from active occupation as long as possible. Length of life is, as a rule, independent of wealth, for luxury and ease are more fatal than poverty; it is also immaterial whether the persons have resided in a town or in the country, or whether they have passed through illness and sorrows, if their disposition did not lead them to brood over them. The eye was of importance in the causation of longevity because loss of sight tended to shorten life by unfitting a person for work, which was the chief factor in longevity. As regards nutrition, a mixed diet was the best; alcohol and tobacco in small quantities have not been found to be detrimental to the attainment of old age, but rather the contrary. Dr. Lindheim has also shown that amongst those who were recognised as talented individuals and leaders of mankind there was an unexpectedly large number of old persons. Old age must therefore be credited with a fair amount of productive activity; many most important public performances have been accomplished by persons more than 60 years old; poets, artists, generals, men of science, politicians, and inventors have seen three score and ten years before reaching their zenith. The suggestions thrown out by Dr. Lindheim are worth mentioning. As paramount importance attaches to the lineage of an individual, medical practitioners ought to be consulted before marriage; a certificate of health ought to be furnished by each of the contracting parties; matrimonial transmission of syphilis or gonorrhœa ought to be made punishable; healthy persons in the poorer circles should have inducements to marry and rear healthy offspring; and breast-feeding should be encouraged by awards and the protection of mothers. The age for compulsory retirement from active work ought to be made higher than at present, unless in case of illness. Dr. Lindheim says that retirement from active work, whether compulsory or prompted by indolence, means a loss for the State and premature death for the individual.

Cremation in Austria.

The progress of cremation in this country is far from satisfactory from a medical point of view. There is a society here called "Flamme" (Flame) which seeks to promote this idea, but the number of its members is less than 300, and it has not yet been found possible to establish a crematorium in Vienna, although there are two in other parts of Austria. There is, however, a small, though constant, increase in the number of persons who, in their wills, order the cremation of their remains. Last year 115 bodies were sent from Vienna to Graz for this purpose. In spite of medical remonstrances, when the subject was discussed in Parliament, ecclesiastical reasons were brought forward in opposition, and whenever such arguments are adopted, then, in this country, they are victorious. At one of the last medical exhibitions the "Flamme" had a series of exhibits to show the advantages of cremation in comparison with interment, both from the practical and the sentimental point of view. The appearance of a corpse disinterred after the lapse of a period between one and three years, and consequently exhibiting the process of slow decomposition was gruesome enough when compared with the unobjectionable condition of the ashes preserved in urns. A prize has been offered by the "Flamme" for the invention of an apparatus for rapid and economical cremation; a reduction of the rates charged by burial grounds for the urns containing the ashes of the dead has also been applied for but in vain. A "travelling school" has, however, been recently established for the purpose of popularising the facts which are in favour of cremation, and as no obstacle has been placed in its way by the local authorities the result will perhaps be satisfactory. Needless to say the fees at present charged are too high to make cremation possible among the poorer class of the population.

The Indications for Cæsarean Section in Placenta Prævia.

At a recent meeting of the Obstetrical Society of Vienna there was a discussion on the value of Cæsarean section in cases of placenta prævia. Dr. Novak reported from Professor Rosthorn's clinic that in the last seven years there were 237 cases of placenta prævia in which 5·9 per cent. of the mothers and 80 per cent. of the children died. The methods adopted (combined version, without extraction) accounted for the high death-rate of the infants. The results in private practice, however, were excellent, only 2 per cent. of the mothers and 38 per cent. of the children dying in connexion with parturition. The reasons for this were that the surroundings were better and there was an earlier resort to medical help than among those classes who apply to the hospitals. The results of the purely obstetric methods were so favourable in expert hands that they could hardly be improved by Cæsarean section. Professor Schauta in examining the records of 54,000 cases of labour found 438 cases of placenta prævia, with a maternal mortality of 7 per cent. and a fœtal death-rate of 57 per cent. Among all these cases there were only 88 (cases with complete placenta prævia) which would have been deemed suitable for Cæsarean section, while of these only 25 women could be considered uninfected and it would be highly dangerous to undertake the operation in an infected woman. Of these 25 cases four died, all of them from hæmorrhage; they had been brought to the hospital almost exsanguine. The remaining 21 were delivered by ordinary methods and survived the labour. Thus it would appear that Cæsarean section could not have reduced the maternal mortality. Moreover, as the majority of the children were under the normal weight, even the infantile mortality would hardly be diminished by the operation. Professor Schauta would restrict Cæsarean section in placenta prævia to cases where the patient had not had hæmorrhage, had not been examined outside the clinic, and was pregnant with a healthy full-term child. Amongst the immense collection of 54,000 cases he could not find even one complying with these requirements. Similar experiences were reported by Professor Porkacek, Professor von Rosthorn, and others. The agreement between the speakers, who are connected with the largest obstetric clinics in Vienna and perhaps in Europe, is of special interest on account of their great experience and the enormous material for evidence at their disposal.

July 12th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Deaths from Poisoning in Bengal; Analysis of Water and Milk.

THE prevalence of poisoning cases in Bengal is prominently brought to notice in the annual report of the Chemical Examiner to the Government for 1908, which has just been issued. The viscera of no fewer than 770 persons suspected of having been poisoned were chemically analysed during the year, and poison was detected in 317 cases, this proportion being equivalent to 41·17 per cent. and 38·57 per cent., as compared with the year preceding. Opium was, as usual, the poison most generally used, arsenic being next in frequency. Of the 133 samples of drinking-water received from jails, municipalities, and other departments analysed during the year, 3 were classified as "good," 93 as "usable," 18 as "suspicious," and 19 as "impure." As regards milk, 18 samples were analysed, and of these 11 were found to be of good quality and 7 to be diluted with water.

The Viceroy of India.

The Viceroy and Lady Minto completed their Pasteur treatment on May 28th. Their Excellencies have not suffered in general health.

Illness of the Amir.

The Amir of Afghanistan, who has lately been suffering from gout, having derived but little relief from the ministrations of the Kabul hakims, has asked the Government of India for the loan of the services of a competent medical officer. The officer selected is Major H. G. Melville, I.M.S., professor of materia medica in Lahore Medical College. Major Melville will probably be leaving for Kabul shortly. Having spent much of his early medical career on the frontier, this officer has a knowledge of both Pushtu and Persian.

Health of Bombay.

The health of Bombay continues to improve and the week ending May 29th shows another decided drop in mortality from plague. Cholera is, however, still present, the deaths for the week numbering eight, three of which, however, were imported cases. These three bring up the number of cases imported from up-country during the season to 174, and it is worth noting that although the complaint has been dragging on all through the season only 45 deaths from cholera besides these have occurred in the city. The figures for the week ending May 29th as regards the general health of the city are particularly interesting, because they show that even including plague Bombay city is in a healthier condition now than it was in pre-plague days. The mortality for the week, including plague, gave a death-rate of 33·18 per 1000; the average rate for this time of year for the five years previous to the plague outbreak was 33·28. Deducting deaths from plague, we find that the remaining death-rate at the present time is only 25·3 per 1000 of the population.

Deaths caused by Wild Animals.

The total number of persons killed in the Punjab by wild animals and snakes during the year 1908 was 953, a very slight increase over the number reported in 1907. Out of this number no less than 925 died from the effects of snake-bite; the number of deaths due to leopards, wolves, hyænas, and other animals (including one death from a species of poisonous lizard) amounting to 28, as compared with 19 last year. The Lahore district kept its position at the head of the list in numbers of deaths from snake-bite. Kangra, as in 1907, was the only district in which persons were killed by wild boars. As regards the number of cattle killed by wild animals, the figures for 1907 were abnormally large. In 1908 the number fell to 1643, being 1188 less than in 1907. The total number of wild animals other than snakes killed in the province in 1908 was 1238, an increase of about 50 per cent. over the figures for 1907. The increase is due entirely to the number of wolves killed (882), which was unusually small in the previous year. 4228 snakes were, it appears, killed in 1908. The number of persons reported to have been killed by wild animals in the United Provinces during 1908 was 194, as compared with 159 in the previous year and 280 in 1906. The increase was largely due to the number of persons killed by leopards in Kumaon, which rose from six to 35, and by wolves in Fyzabad division. There is a man-eating leopard in Almora district on whose head a reward of no less than Rs.500 has been placed. In Bahraich district wolves are said to have taken suddenly to killing people, but as they did not form packs it was not possible to organise measures for extirpating them. The local government suggests that this explanation is not correct, and whether correct or not it is unsatisfactory. The reported mortality from snake-bite decreased from 5080 to 4816 persons. The number of cattle killed by wild animals is reported as 11,083, or nearly double what it was two years ago. This is probably due largely to more careful reporting; it is certain that even now a far larger number of cattle are killed than the figures suggest. Leopards are much the most destructive of wild animals, over 8000 of the cattle being killed by these animals. Kumaon suffers worst in this matter, the Deputy Commissioner of Almora attributing the increased destructiveness of leopards to the wholesale slaughter of game by Gurkhas, who have thus diminished the natural food-supply of the leopards. There was an increase in the number of wild animals reported to have been killed and in the rewards paid for their destruction.

Cholera in Hyderabad.

Cholera has broken out in the dominions of H.H. the Nizam. The part worst affected is Nander and Khandar in the Nander district. Fatal cases are reported in Subzawandi and one in Karwan, both places within the Hyderabad municipal area. The officials of the Nizam's government are dealing with the situation, and precautions are being taken to fight the advance of the disease. In Secunderabad Major F. L. Blenkinsop, I.M.S., in medical charge, and Major Leslie, cantonment magistrate, are prosecuting measures to prevent the introduction of the disease in the cantonment limits. An excellent sanitary system exists in Secunderabad, which is divided into circles, each with its own sanitary staff and appurtenances, but what is a perplexing problem is the tendency of the Kompte class to conceal cases. In view of the severe epidemics in previous years and the wide area over which cholera is now reported to be raging outside, it is most expedient to adopt rigorous precautionary measures for the safety of British subjects and the large garrison adjacent to the town.

June 2nd.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology held on July 1st, 2nd, 5th, and 6th, 99 candidates presented themselves, of whom 50 were approved and 49 were rejected. The following are the names of the successful candidates:—

Basil Fraser Beatson, St. Mary's Hospital; Robert Campbell Begg, M.A., B.Sc. New Zealand, New Zealand and Edinburgh Universities; Percy Lytton Tempest Bennett, London Hospital; James Alfred Ayton Boddy, Manchester University; Arthur Vincent Boyall, [illegible] Hospital; Philip Norman Button, [illegible] ck William Campbell, University [illegible] Weston Clayton, St. Mary's Hospita [illegible] t. Bartholomew's Hospital; Jules M [illegible] Hospital; Rustom Kershasp Dadachanji, L.M. & S. Bombay, Bombay University and London Hospital; Andre Constant Labauve d'Arifat, Guy's Hospital; Arthur Lewis Davies, University College Hospital; David Henry Davies, University College, Cardiff; Satis Chunder De, L.M. & S. Calcutta, L.M. Rotunda, Calcutta Medical College and King's College; Edward Percy Drabble, London Hospital; Christopher [illegible] nster Hospital; Maberly Squire Esler, St. [illegible] ge Frederick Fawn, University College, [illegible] rles Fazan, Middlesex Hospital; Edward [illegible] ab., Liverpool University; Claude Emery [illegible] versity; Charles Alexander Robertson [illegible] Charing Cross Hospital; Harry James Hoby, James Moncrieff Joly, and George Basil Henley Jones, Guy's Hospital; Cornelius Kennedy, [illegible] na, Guy's Hospital; Adolph [illegible] y College Hospital; Walter [illegible] en David Baker Mawson, [illegible] Menagé, Guy's Hospital; Charles Edward Hamilton Milner, King's College; Rustom Dhunjeabhoy Mody, L.M. & S. Bombay, Bombay University and King's College; William Ewart Neale, University College, Bristol; [illegible] y's Hospital; Dyfrig Huws Pennant, [illegible] Herbert Thomas Retallack-Moloney, [illegible] ander Reynolds, St. Mary's Hospital; [illegible] Hugh [illegible] binson, St. Bartholomew's Hospital; [illegible] awala, L.M. & S. Bombay, Bombay U [illegible] Guy's Hospital; Claude William Treherne, St. Thomas's Hospital; Ivan Lindley Waddell, St. Bartholomew's Hospital; and Edward Algernon Weaver, Birmingham University.

At the quarterly examination in Practical Pharmacy held on July 8th and 9th the following gentlemen were approved:—

William Guy Embleton Al [illegible] 's Hospital; Edgar Bernard Argles, St. Mary [illegible] William Atkinson, [illegible] Hospital; Richard [illegible] as's Hospital; Maurice Holdsworth [illegible] ospital; Herbert Rowse Bastard, Guy's [illegible] Hazlerigg Noel Bell, St. Thomas's Hospital; Guy Kenneth Butterworth, St. Mary's Hospital; Rowland Burnell Campion and Kenneth Bleckly Clarke, Guy's Hospital; Richard Christopher Clarke, University College, Bristol; Francis Howard Cleveland, St. Bartholomew's Hospital; Richard William Davies, St. Mary's Hospital; William Alexander Dunn, Otago University and St. Thomas's Hospital; Raymond Gam [illegible] rsities; Frank Garratt, St. [illegible] Greaves, Leeds University [illegible] Cambridge and Leeds Uni [illegible] University; Brabazon James [illegible] and William Henry Harris, St. Bartholomew's Hospital; John Rollo Hayman and William Reginald Huleatt Heddy, Middlesex Hospital; Henry Sydney Colchester Hooper, London Hospital; Job Hughes, Birmingham University; Arthur Ernest Williams Idris, University College Hospital; Gwilym James, B.A. Cantab., Cambridge University and University College Hospital; Ah Chit Jap, Guy's Hospital; Arvor Jones, Liverpool University; Evan Lawrence Jones, Guy's Hospital; Walter Foulkes Jones, B.A. Cantab., Cambridge University and St. George's Hospital; Timothy Joseph Killard-Leavey, Guy's Hospital; Claude King [illegible] Bristol; William Stocks Lacey, L.D.S [illegible] Joseph George L'Etang, St. Bartholom [illegible] McGillivray Loughnane, St. Thomas's [illegible] McIntosh, S [illegible] Reginald Victor Martin, St. Mary's [illegible] asefield, Middlesex Hospital; Char [illegible] 's Hospital; Frederick Meinertzhag [illegible] Hospital; Henry Leslie Messenger, [illegible] lard, Birmingham University; Jo [illegible] Hospital; John Henry Newmarch, B.A. Cantab., Cambridge University and St. George's Hospital; Henry Maurice Dunlop Nicoll, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Meredydd Parry and George Stanley Phillips, University College, Cardiff; Arthur Thomas Pitts, L.D.S. Eng., Middlesex Hospital; [illegible] lliam [illegible] ital; Arthur I [illegible] fred Herbert [illegible] ott Reynold [illegible] Hos- Rhodes, [illegible] dlle pital; [illegible]

Douglas Robertson, St. Mary's Hospital; Hassan Ibrahim Shahin, Cairo and Guy's Hospital; Jack Garland Skeet and Eric John Staddon, St. Thomas's Hospital, Horace Steinbach, [illegible]
Hospital; [illegible]
ell Taylor, [illegible]
aylor, B A. [illegible]
Hospital; [illegible]
t. Andrew [illegible]
iam, Leeds [illegible]
les George [illegible]
Hamersley [illegible]

Royal College of Surgeons of England.—At a meeting of the Council held on July 8th licences to practise Dentistry were granted to the following gentlemen:—

Benjamin Her[illegible] Michigan University, Charing Cr[illegible] Theodore Scott, Middlesex [illegible] and Alexander MacDonald [illegible]

Society of Apothecaries of London.—At the Primary Examination, Part I. and Part II., held recently, the following candidates passed in the subjects indicated:—

Biology.—M. S. Bowen, London Hospital; and J. K. Nariman, Bombay.
Chemistry.—M. S. Bowen, London Hospital; and H. E. Rose, Cambridge.
[illegible]—E. B. Keen, Charing Cross Hospital; [illegible] Hospital, and L. M. Potter, Royal [illegible] ospital
Physiology—J. M. Coplans, Westminster and King's College Hospitals; and W. R. de C. Shearman, Manchester.

Victoria University of Manchester.—The following candidates have been approved for the degree of M.D.:—

G. D. Dawson (awarded gold medal), R. L. Ferguson (commended), C. E. Lea (commended), A. E. Rayner (commended), Elsie M Royle (commended), F. P. H. Birtwhistle, T M. Bride, H. R. Clarke, H. M. Crake, G. F. Porter, and T. W. Walker.

University of Glasgow.—The following have satisfied the examiners in the Fourth (Final) Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.):—

William Shanks Alexander, M A., Andrew Clark Anderson, ‖William Anderson, James Currie Auchencloss, David Barbour, Arthur Munby Bayne, [illegible]
Carl Joseph [illegible]
Munro Camer[illegible]
James Lang [illegible]
M.A., Donal[illegible]
Fletcher, M A. [illegible]
George Glover [illegible]
Charles Gord[illegible]
Adamson Ha[illegible]
Bentley Moor[illegible]
Leishman, Wil[illegible]
B Sc., William [illegible]
M'Intyre, Rob[illegible]
**John Willia[illegible]
M'Whirter, A[illegible]
Hyacinth Ber[illegible]
Findlay Murch[illegible]
[illegible] John Robertson, [illegible] son, Hugh [illegible] Alexander [illegible] nd Steel, [illegible] on Sutherland [illegible] Herrmann [illegible] M'Gruther [illegible]

* [illegible] cal Surgery, (b) [illegible] y. † (a) Surgery [illegible] inical Medicine. [illegible] (a) Practice of [illegible] ry and Clinical [illegible] ** Midwifery.

Trinity College, Dublin.—At examinations held recently the following candidates were successful in the subjects indicated:—

Preliminary Scientific Examination.

Physics and Chemistr[illegible] William H R. M'Carter, Joseph S. English [illegible] Boyers, James A. [illegible] John G. Butt, Ric[illegible] W. D. Magee, Wil[illegible] Mecredy, William [illegible] David H. Hadden, [illegible] Ryan, and Herbert R Ford.
P[illegible] David H. Hadden, [illegible] illiam [illegible] orothy [illegible] or A. [illegible] Small, [illegible] eddy, [illegible] ibald [illegible] R. Toomey, Francis A. L'Estrange, William R. L Waters, George A. Bridge, William D. Pile, Henry J. Brown, Edmund S. Hatte, Charles O'Reilly, George Buchanan, Henry C. D. Miller, Joseph A. Quin, and Etienne J. Malherbe.

Previous Dental Examination.

Physics and Chemistry—George G. Yeates.
Materia Medica—Kenneth C. M'Naught and Henry Kirk.

Intermediate Medical Examination, Part II.

Arthur Chance, Maurice S. Moore, Patrick F. Nunan, William Frier, Hugh E. Williams, Samuel A. Lane, Thomas W. E. Henry, Frederick Burke, and Cecil Rutherford.

Final Medical Examination, Part II.

Midwifery.—Beatrice M. Hamilton, Hilgard Müller, Eric J. Powell, Adams A. M'Connell, Arthur C. Hallowes, Marius A. Diemont, Benjamin A. Molyneux, David Duff, George E. Craig, William H Hart, John W. Flood, and Charles H. Denham.

Foreign University Intelligence.—*Bordeaux:* Dr. Arnozan has been appointed Professor of Clinical Medicine and Dr. Villar Professor of Clinical Surgery.—*Heidelberg:* The Moos Scholarship, the value of which is about £45, has for the first time been carried off by a lady, Frl. Köbeln, for a paper on Otology.

The Hospital for Sick Children, Great Ormond-street.—The fees for attending the Medical School of this hospital have been revised as follows: Special fee for clinical clerks, three months, £3 3*s.*; student's ticket, three months, £5 5*s*; and perpetual ticket, £10 10*s*.

The Children's Sanatorium for the Treatment of Phthisis.—The Children's Sanatorium at Holt, Norfolk, for the treatment of phthisis has just received a gift of £300 "In Memoriam M.T" The amount will be placed to the fund for the permanent building which it is proposed to proceed with when the necessary amount is reached. It is understood some £6000 are required.

Royal College of Surgeons in Ireland.—The following prizes were awarded for the summer session:—Barker anatomical prize (£26 5*s.*): H. R. Tighe; special prize (£21), J. S. Pegum. Carmichael scholarship (£15): J T. Duncan. Gold medal in operative surgery: Miss I. M. Clarke; silver medal, F. N. Harvey. Stoney memorial gold medal in anatomy: J. T. Duncan. Practical histology: S. Griffin, first prize (£2) and medal; I. M. Swanepoel, second prize (£1) and certificate. Practical Chemistry: N. A. Sheridan, first prize (£2) and medal; G. N. Smyth, second prize (£1) and certificate. Public health and forensic medicine: J. T. Duncan, first prize (£2) and medal; K. L. O'Sullivan, second prize (£1) and certificate. Materia medica: J. T. Duncan, first prize (£2) and medal; Vincent J. White, second prize (£1) and certificate. Biology: J. D. Cherry and J. C. Sproule (equal), first prize (£2) and medal each. The lectures and practical courses of the winter session will commence on Oct. 15th.

The Sanitary Regulation of Food Exposed for Sale in London Streets.—The London County Council decided, by 20 votes to 10, at the end of a long sitting on July 13th, to give public notice of its intention to consider the advisability of promoting legislation in the next session of Parliament to secure the observance of proper sanitary regulations in regard to articles of food exposed for sale in the streets. As the public health committee points out in bringing forward the proposal, a large amount of foodstuff is sold in London from barrows and stalls, but although the sanitary authorities have power under Section 8 of the London County Council (General Powers) Act, 1908, to inspect premises such as yards, stables, and arches in which is stored food to be sold by costermongers on barrows, the power of inspection ceases when the foodstuff is placed on the barrows and is taken into the streets. *It is obvious that at this stage* contamination is most likely to occur, and therefore the public health committee proposes that the local authorities shall be empowered to exercise control in the matter. It is further proposed to deal at the same time with the nuisance caused by the accumulation of manure at stables in London. In this connec[illegible]
carried on by [illegible]
horse manure [illegible]
flies, and that [illegible]
regard to the prevalence of flies was manifested in a marked degree at a distance of from 100 to 150 yards and was distinctly appreciable as far away as 200 yards. In addition to requiring the more frequent removal of manure, the public

health committee is of opinion that sanitary authorities should be empowered to deal with the structure and paving of stables, as in the case of cowsheds.

UNIVERSITY OF LONDON.—The following awards have been made at University College, London:—Andrews Scholarships:—For students of one year's standing, £30 each: Classics, Louise W. Stone; Modern Languages, Eileen O'Rourke; Mathematics and Science, R. G. Lunnon. Second Year's Scholarship, £20: D. M'Donald. Carey Foster Research Prize: Caroline Schneider. Oluff Memorial Prize (£15): T. C. Graves. Jews' Commemoration Scholarship, £15 per annum for two years: A. E. Evans. Physics Research Studentships: £60, F. Simeon; £40, B. B. Baker. Science Scholarship awarded by H.M. Commissioners for the Exhibition of 1851: H. E. Watson, B.Sc. Tuffnell Scholarship in Chemistry, £80 per annum for two years: H. J. Page. School Hygiene Certificates: C. V. Aserappa, Mary Babbs, Miss S. E. Fisher, Ethel M. Heaton, Isabella Low, J. H. Paddy, Alice Rhoden, Alice R. Ridgeway, Mrs. Katherine E. Ross, J. H. Willis, and Mrs. Alice van I. Winter.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Pfannenstiel, professor of midwifery and gynæcology in the University of Kiel, at the age of 47 years. He was born and educated in Berlin and was afterwards assistant to Professor Fritsch in Breslau, where he afterwards held several important appointments, the University conferring on him the title of professor. Subsequently he went to Giessen as successor to Professor Löblein, and then to Kiel, where he succeeded Professor Werth. He published a number of papers mostly dealing with uterine tumours, and devised a special incision in certain cases of laparotomy. He was joint author of Winckel's "Manual of Midwifery" and of Beit's "Manual of Gynæcology."—Dr. Friedrich Endemann, Privy Medical Councillor of Hesse. He was very active politically and was for many years a member of the German and Prussian Parliaments. His age was 76 years.—Dr. Henry Cazalis, a well-known French poet, who wrote under the pseudonym of Jean Lahor.

THE MEDICO-LEGAL SOCIETY.—The annual dinner of the Medico-Legal Society was held on July 13th at the Holborn Restaurant, London, with the Hon. Mr. Justice Walton in the chair. Among those present were Sir Cozens Hardy, Master of the Rolls, Mr. H. T. Butlin, Sir William J. Collins, Dr. F. J. Smith, Mr. R. Henslowe Wellington, Dr. G. Pernet, Mr. W. Schröder, honorary treasurer, and Mr. Digby Cotes-Preedy and Dr. William A. Brend, honorary secretaries. A telegram of regret at inability to attend was received from Sir R. Douglas Powell. Sir William Collins, in proposing the toast of "The Law and Medicine," said that probably there never was a time in which the general public was more ready to listen, almost obsequiously, to the last word of medico-legal science, if only it would speak with authority and avoid contradictions. Sir William Collins concluded by pleading for simple language in the proceedings of medical and scientific societies; he especially instanced the Pathological Society, and urged that intellectual jargon should be replaced by the Anglo-Saxon tongue; he deprecated the pathological slang so frequently observed in the proceedings of the scientific societies. This toast was acknowledged by Sir Cozens Hardy, the Master of the Rolls, who observed that the word "evidence" applied to what medical men said in the witness-box was not strictly accurate. In nine cases out of ten medical men were bound to give not evidence but expressions of opinion, and therefore conflicting opinions occurred. Knowledge being what it was, it was impossible for any professional man to state more than his opinion of the cause of any particular bodily condition or of what might be the result of such condition. He objected to the long, unintelligible, and unpronounceable words used by some medical and scientific witnesses, which were the puzzle of juries and the distress of judges. Legislation seemed now more and more closely involving medicine in legal problems, and the appointment of medical referees was a useful reform. Mr. H. T. Butlin, President of the Royal College of Surgeons of England, also replied for this toast, while submitting the toast of "The Medico-Legal Society." Mr. Justice Walton, who responded, said that he was satisfied from his experience that great benefit arose from the association of the lawyer with the medical man in discussing subjects of importance to the welfare of the public. Mr. E. Marshall Hall, K.C., in a witty speech, gave the toast of "Our Guests," which was eloquently acknowledged by Dr. Smith, who, continuing his speech, proposed "The Officers of the Society." After this toast had been duly replied to by Mr. Cotes-Preedy, the proceedings terminated.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Progress of Business.

THE progress made with the Finance Bill in Committee has been slow, the work of examining the proposals relating to land being extremely onerous. Late sittings have been frequent and have put a considerable strain not only on Members but on the staff which is kept in constant attendance whilst the House of Commons is sitting. The proceedings on the Finance Bill and the demands made on the time of the House for passing supply have had the effect of preventing progress being made with several measures, such as the Housing and Town Planning Bill and the Milk Bill. Mr. BURNS has been asked when he intends to proceed with the second reading of the latter measure, but he cannot fix a date. Some regret is expressed that more progress was not made with these Bills earlier in the session.

The West African Medical Staff.

The report of the Departmental Committee on the West African Medical Staff is now available as a Parliamentary paper. Mr. H. J. READ of the Colonial Office was chairman, and amongst the members of the Committee were Dr. T. THOMSON (Local Government Board), Mr. W. H. LANGLEY, C.M.G., F.R.C.S.I. (Principal Medical Officer, Gold Coast), and Dr. J. K. Fowler (late Dean of the Faculty of Medicine, University of London, and senior physician, Middlesex Hospital). The report deals at length with the duties, organisation, emoluments, and selection of officers of the West African Medical Staff.

HOUSE OF COMMONS.

WEDNESDAY, JULY 7TH.

The Mater Infirmorum Hospital, Belfast.

Mr. HUGH BARRIE asked the Chief Secretary to the Lord Lieutenant of Ireland whether it was proposed to affiliate the Mater Infirmorum Hospital (Belfast) to the new Belfast University; and, if so, were its teachers and teaching to be recognised; and would the members of its medical staff be admitted upon the examining board of the University.—Mr. BIRRELL replied: It is not proposed to affiliate the Mater Infirmorum Hospital to the Queen's University. It is proposed by the Medical Faculty that the hospital should be recognised as a place for clinical teaching as it was by the old Queen's College, but this is subject to the approval of the Senate. The appointment of examiners is for the Senate, upon the recommendation of the Academic Council. I have no means of knowing how far the medical staff of this or any other hospital will be recognised by the Senate.

Public Health in Ramsey Urban District.

Mr. BOULTON asked the President of the Local Government Board what steps he had taken to compel the urban district council of Ramsey to make proper provision for the safety of the town against scarlet fever and epidemics arising from the bad water and bad drainage to which his attention was called a year ago.—Mr. BURNS wrote in reply: I have pressed the subject of sewage disposal on the district council. It has directed some temporary measures to be taken, but it urges that the expense of providing a new system of sewers, which would also necessitate a water-supply, would be prohibitive. I have not received any such complaint of default on the part of the district council with respect to sewerage and water-supply as would enable me to take compulsory action under the Public Health Act. No outbreak of infectious disease in the district has been reported to me during the present year.

The Irish Cowsheds and Milkshops Order.

Mr. SHEEHAN asked [illegible] utenant of Ireland, whether any [illegible] appointed as inspectors under [illegible] local sub-sanitary officers who also held the position of relieving officers, as well as other positions under the rural district councils; if so, could he give the names of the district councils, or of any one of them, which had made such appointments; and would he state whether the Local Government Board intended to give its sanction to appointments of this nature, in view of the fact that the time of these gentlemen ought to be already fully occupied if they were efficiently to perform the duties appertaining to other offices held by them.—Mr. BIRRELL furnished the following written reply: I understand that in 68 districts the sanitary sub-officers, who frequently hold the position of relieving officers as well, have been appointed to act as inspectors of dairies. I am forwarding a list of these districts to the honourable Member. The Local Government Board considers it unnecessary to press local authorities to appoint separate inspecting officers of dairy premises in localities where the dairying industry does not assume large proportions. A sanitary sub-officer has opportunity of observing defects or insanitary conditions in dairy premises, and there is no reason to suppose that his time is so fully occupied with other official duties as to prevent his carrying out such inspections. Moreover, under the Board's Sanitary Orders of May, 1900, it already forms part of his duties in a district where no inspector of dairies has been appointed to inspect dairies, cowsheds, and milkshops, and to report to the sanitary authority thereon. The sanction of the Board is only required so far as concerns the remuneration of officers under the Dairies Order.

THURSDAY, JULY 8TH.

Dublin Hospitals and the Royal Irish Constabulary.

Mr. HAZLETON asked the Chief Secretary to the Lord Lieutenant of Ireland on what grounds Steevens's Hospital was selected by the Royal Irish Constabulary for the treatment of constables; whether the hospital enjoyed a monopoly among Dublin hospitals for Royal Irish Constabulary patients; and what sums per week were deducted from

patients. Single men pay 2*s.* 3*d.*, married men 1*s.* 4*d.*, and recruits 1*s.* 10*d.* per day for treatment in the hospital.

Public Experiment on a Bulldog.[1]

Mr. ELLIS GRIFFITH asked the Secretary of State for the Home Department whether his attention had been called to a public experi

had been registered by the licensee for this purpose under section 7 of the Cruelty to Animals Act, 1876; and whether any action had been, or was being, taken in reference to the matter.—Mr. GLAD-

stances?

Insanitary Houses in Donaghadee.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the report of the

The reports hav
council, and the
decides to take,

The Sale of Margarine in Ireland.

Mr. DEVLIN asked the Vice-President of the Department of Agriculture (Ireland) whether he was now in a position to state
what means the De protect the public,
and especially the from being sold
margarine instead of plied (by written
answer): The duty and Drugs Acts
primarily devolves o epartment can, in
certain circumstances, have samples of articles of food taken for

MONDAY, JULY 12TH.

Public Health in Ramsey.

In reply to Mr. BOULTON, the President of the Local Government Board said that he was

pulsory action under the
that one of the medical
should visit the district an

Typhoid-Carriers at Millbank.

TUESDAY, JULY 13TH.

The Spirit Tax and Drugs.

Sir THOMAS BRAMSDON asked the Chancellor of the Exchequer whether he could state what would approximately be the loss on the spirit tax if a return were allowed of the additional duty on spirits

relied upon to make an accurate return of the spirits so used.—Mr. HOBHOUSE (on behalf of Mr. LLOYD GEORGE) replied: My right honourable friend has no data which would enable him to give the information required by my honourable friend. Except in the case of drugs prepared on the premises he does not see how officers of the institutions in question would be able to make an accurate return of the amount or strength of the spirits used.

The Indian Medical Service and Professional Fees.

The Board of Trade and Colour Tests.

Mr. HENNIKER HEATON asked the President of the Board of Trade whether there was any civilised country in the world, besides our own, which regarded the wool test, the official test of the Board of Trade, as a reliable test for colour blindness, whether he was aware that not a
country was of opinion
ther he could state how
of Trade, either those
had any knowledge of
(by written answer)
countries which have
colour blindness in the
the Board of Trade on
the advice of a committee of the Royal Society, which comprised both eminent physiologists and physicists, and I have reason to think that the highest scientific opinion is in favour of its efficiency. One of its advantages is that it can be applied by persons who possess no knowledge of physiology or ophthalmology. No such knowledge is therefore demanded of the Board of Trade examiners in the first instance. But in the supervision of their tests, in the instructions of their examiners, and in conduct of their special examination on appeal, the Board have the advantage of the services of two acknowledged authorities on colour vision, both Fellows of the Royal Society, who hold the degree of Doctor of Science.

WEDNESDAY, JULY 14TH.

Women and the Diplomas of the Royal College of Surgeons.

Mr. V. H. RUTHERFORD asked the Secretary of State for the Home Department whether, in view of the fact that the Royal College of Surgeons was unable, through the provisions of the Medical Act of

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[1] See THE LANCET, May 22nd, 1909, p. 1501.

BOOKS, ETC., RECEIVED.

Bale (John), Sons and Danielsson, Limited, London.

The Dental Directory, 1909. Compiled from Official Sources Price 2*s*. 6*d*. net.

Synoptic Chart of Cardiac Examination. Arranged by John D. Comrie, M.A., B.Sc., M.B., F.R.C.P.E. Price 2*s*. 6*d*. net.

Chapman and Hall, Limited, London.

A Study of the Principles of Nature. By Frederick Hovenden, F.L S., F.G.S., F.R.M.S., F.R.Hist.S. Price 6*s*.

Churchill, J. and A., London.

An Atlas of Dental Extractions, with Notes on the Causes and Relief of Dental Pain. By C. Edward Wallis, M.R.C.S., L.R.C.P., L D.S. Price 3*s*. 6*d*. net.

A Manual of Minor Surgery and Bandaging (Heath). Fourteenth edition. By Bilton Pollard, F.R.C.S. Price 7*s*. 6*d*. net.

Frowde, Henry, and Hodder and Stoughton, London.

Oxford Medical Publications. A System of Operative Surgery. By Various Authors. Edited by F. F. Burghard, M.S. Lond., F.R.C S. Eng. In Four Volumes. Vol. IV. Price 36*s*. net per volume; to subscribers, £6 net per set of four volumes.

Griffin, William, and Sons, Edinburgh and London.

A Theory Regarding the Origin of Cancer. By C. E. Green. Second edition. Price not stated.

Hirschwald, August, Berlin.

Hamodynamische Studien. Von Dr. med. Johann Plesch. Price M.7.

Erholungs- und Kurorte. Nach ihren Hohenlagen zusammengestellt. Von Lasirifa. Price Pf.60.

King, P. S., and Son, London.

By What Authority? The Principles in Common and at Issue in the Reports of the Poor-Law Commission. By John H. Muirhead, LL.D. With an Introduction by Sir Oliver Lodge, LL.D., F.R.S. Price 2*s*. net.

Lippincott (J. B.) Company, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., with collaboration. Volume II., Nineteenth Series, 1909. Price not stated.

Long, John, London.

A White Lie. By G. Russell Beardmore. Price 6*s*.

Moffat, Yard, and Co., New York.

Tuberculosis: A Preventible and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. By S. Adolphus Knopf, M.D. Price $2.00 net.

Rebman, Limited, London.

Accidental Injuries to Workmen with Reference to Workmen's Compensation Act, 1906. By H. Norman Barnett, F.R.C.S. With Article on Injuries to the Organs of Special Sense by Cecil E. Shaw, M.A., M.Ch., M.D., and Legal Introduction by Thomas Campbell, M.A., LL.B. Price not stated.

Springer, Julius, Berlin.

Klinik und Atlas der Chronischen Krankheiten des Zentralnervensystems. Von Professor Dr. August Knoblauch. Price M.28.

University Correspondence College, Cambridge and London.

University Correspondence College. The Calendar, 1908–1909. Price 1*s*. net.

Urban und Schwarzenberg, Berlin und Wien.

Atlas der Elektropathologie. Von Dr. S. Jellinek. Price M.35.

Wiley, John, and Sons, New York. (Chapman and Hall, Limited, London.)

Laboratory Methods of Inorganic Chemistry. By Heinrich Biltz and Wilhelm Biltz. Authorised Translation by William T. Hall and Arthur A. Blanchard. First edition. First thousand. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Bartlett, Jacob Harry, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Tintern District by the Chepstow (Mon.) Board of Guardians.

Clarke, N. D., has been appointed Dental House Surgeon at Guy's Hospital.

Dobson, J. R., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Royal Hamadryad Seamen's Hospital, Cardiff.

Edwards, J. C., L.R.C.P. & S. Edin., has been appointed District Medical Officer by the Merthyr Tydvil (Glamorganshire) Board of Guardians.

Emerson, Herbert Bree, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer of Pershore (Worcestershire).

Garrett, R. R., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bishopstoke District of the county of Hants.

Lithgow, J., M.D., C.M. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cleland District of the county of Lanark.

Mulcahy, P., L.R.C.S. Irel., L.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballinamore District of the county of Leitrim.

Pim, Arthur Augustus, F.R.C.S. Edin, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Beaminster (Dorset) Board of Guardians.

Ryce, R. S., M.D. Irel., has been appointed District Medical Officer by the Merthyr Tydvil (Glamorganshire) Board of Guardians.

Smyth, Thomas Edward, M.D., B.Ch. Dub., has been appointed Medical Officer to Kelly College, Tavistock (Devon).

Spain, H. G., has been appointed Dental House Surgeon at Guy's Hospital.

Stuart, J. H. W., has been appointed Dental House Surgeon at Guy's Hospital.

Warner, H. F., M.B., B.S. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Fakenham District of the county of Norfolk.

White, J., M.R.C.P. Irel., M.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tullaroan District of the county of Kilkenny.

Williams, L. A., M.D. Edin., D.P.H. Liverp., has been appointed Medical Superintendent to the Bradford Educational Authority.

Young, Ernest, M.D. Durh., has been appointed Clinical Assistant to the Out-patient Department of the Mount Vernon Hospital for Consumption and Diseases of the Chest.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Belgrave Hospital for Children, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £20 per annum, with board and residence.

Birmingham Infirmary.—Assistant Resident Medical Officer; also Assistant Resident Surgical Officer. Salary in each case £104 per annum, with apartments, rations, and attendance.

Birmingham, Queen's Hospital.—House Surgeon for five months. Salary at rate of £50 per annum, with board, lodging, and washing.

Birmingham, University of.—Walter Myers Travelling Studentship. Value £150.

Blackburn and East Lancashire Infirmary.—Junior House Surgeon. Salary £80 per annum, with board, washing, &c.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £80 per annum, with board, lodging, and washing.

Bristol Royal Infirmary.—Honorary Surgeon.

Burnley, Victoria Hospital.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

Cambridge, Addenbrooke's Hospital.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

Cameron Hospital, West Hartlepool.—House Surgeon, unmarried. Salary £100 per annum, with board, rooms, and laundry.

Cancer Hospital, Fulham-road, London, S.W.—Surgeon.

Canterbury, Kent and Canterbury Hospital.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

Cardiff Infirmary.—House Surgeon for six months. Salary £53, with board, residence, and laundry.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—Assistant Surgeon.

Cheltenham General Hospital.—Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £80 per annum, with board and lodging. House Physician, unmarried. Salary £70 per annum, with board and lodging.

Chester General Infirmary.—House Physician. Salary £90 per annum, with residence and maintenance.

Chesterfield and North Derbyshire Hospital.—Junior House Surgeon. Salary £80 per annum, with board, apartments, and laundry.

Derbyshire County Council.—Assistant Bacteriologist. Salary £150 per annum.

Dumfries and Galloway Royal Infirmary.—Assistant House Surgeon. Salary £55 per annum, with board and lodging.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

Glasgow District Mental Hospital, Lenzie.—Junior Assistant Medical Officer. Salary £125 per annum, with board, lodging, &c.

Govan Parish School Board.—Principal Medical Officer. Salary £500 per annum.

Hackney Union Workhouse, Homerton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

[illegible] with house.
[illegible] Ophthalmic Surgeon.
[illegible] l Officer.
[illegible] ssistant School Medical [illegible]
[illegible] in the Medical Staff.
[illegible]
and washing.
PERTH ROYAL INFIRMARY.—House Surgeon. Salary £60 per annum, with board.
PORTSMOUTH WORKHOUSE INFIRMARY AND CHILDREN'S HOME.—Second Assistant Resident Medical Officer. Salary £120 per annum, with apartments, rations, &c.
ROYAL EAR HOS[illegible] for six months. Sal[illegible] sistants.
RYDE, ROYAL I[illegible] Junior House Surge[illegible]
ST. GEORGE'S [illegible] ssistant Medical Offic[illegible] sidence, and washing.
[illegible] HOSPITAL.—[illegible] 0 per annum, [illegible] Sunderland.—[illegible] per annum, [illegible] rdens, North [illegible] with rooms, board, &c.
WALLINGFORD, BERKS COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.
WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.
WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £80 per annum, with apartments, board, and laundry.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, lodging, and laundry.
WORCESTER COUNTY AND CITY ASYLUM, Powick.—Third Assistant Medical Officer. Salary £140 per annum, all found.

Births, Marriages, and Deaths.

BIRTHS.

MATHESON.—On July 6th, at Butler-road, Harrow, to F. M. Matheson, M.R.C.S., L.R.C.P., and Mrs. Matheson, a son.

MARRIAGES.

BAHR—MANSON.—On July 10th, at St. George's Church, Hanover-square, Philip H. Bahr, M.A., M.B., to Edith Margaret, eldest daughter of Sir Patrick and Lady Manson, and granddaughter of the late Captain James P. Thurburn, R.N.

BERRY—WEST.—On July 6th, at St. Andrew's Church, Fulham, W., Thomas Percival Berry, M.D. Lond., to Florence Eveline West, [illegible] garet's Church, West [illegible] Vicar of St. Andrew's, [illegible] M.A., Henry James [illegible] L.R.C.S., L.R.C.P., of "Ortaquey," Southsea, to Dorothy Esme, youngest daughter of [illegible] Weybread. [illegible] t. Thomas's, Regent-street, [illegible] Ida, daughter of W. B. [illegible] Man.

DEATHS.

ORME.—On July 11th, at the Red House, Matlock, Albert L'Estrange Orme, L.R.C.P., L.R.C.S.I., aged 45 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE RISK OF INCURRING DIGITAL CHANCRE IN MIDWIFERY PRACTICE.

To the Editor of THE LANCET.

SIR,—It has always surprised me that medical men in general have so little to say about the digital chancre. Every man engaged in practice amongst the poorer classes, and especially near any of our seaports, must have been struck with surprise at the large number of cases of grave venereal disease which he is called upon to treat. These men live their ordinary social life in spite of warnings, which, of course, any medical man who saw them professionally would feel bound to give. The inevitable consequence is that persons engaged in midwifery practice in the district will be confronted with many cases of ulcers of undoubted specific origin. If the medical attendant makes his first vaginal examination of such patients with the bare forefinger he runs a certain risk of infection, which is a vastly increased risk if there be any abrasion on the finger.

No doubt many readers will consider that I am going over very old ground in giving this warning, and my only defence is that I have seen one case of digital chancre in a medical man and have heard well-authenticated reports of two others brought about in this way. When we consider that it is very easy to attend a confinement all through and have no suspicion whatever of the presence of venereal disease, and to have the child brought to us in three months' time suffering from "snuffles" and condylomata ani, it is obvious that this [illegible] medical men to wear them as a routine thing at all confinements. They are better for the patient, as they can be rendered far more sterile than the naked hand, and I have tried to show that they are infinitely better for the medical practitioner also.

I am, Sir, yours faithfully,
ALBERT SHEPPERD, L.S.A. Lond., &c.

Brixton, S.W., July 10th, 1909.

WORKHOUSE AND SPA.

A MEDICAL correspondent [illegible] a newspaper report of [illegible] at which a letter was [illegible] their control. This poor fellow was a chronic invalid who had evolved the following plea for a proper course of spa treatment at the expense of the ratepayers:—

> Dear Board of Guardians,—I hope ye will send me to Bundoran for a few months to get cured ...... I am badly with the spine of my back down in my knees, and the stiffness of my joints where the spine of my back ought to be. ...... And ye had great pity for me when ye were up, so I hope ye will send me to Bundoran to the best [illegible] poor disabled unfortunate creature. I have a pair of trousers but no coat and I would like to be decent going to the hotel where ye will send me to in Bundoran, so I hope ye will treat me decent and give me a good suit of clothes going away with me. Dont mind sending nurses with me to Bundoran. They are too expensive and I dont want such a burden on the Union, although the nurses are wanting me to intercede with ye, and bring them with me to Bundoran, but I will get a man friend of my own to come. Please send me soon. Good-bye and thanks,
>
> B. K.

The board of guardians were so unsympathetic as to conceive they had finished their duty in the matter by entering this novel request as "Read" without further comment. *There is more in B. K.'s suggestion that one big expense is less burden to the rates than* [illegible] o for [illegible] the [illegible]

SOME LESS USED MEDICINAL BARKS.

A COMPARISON of the drugs in use in different countries frequently calls attention to the somewhat restricted distribution of some of them. In the United States, for example, a preparation very generally prescribed for coughs is a compound syrup of white pine, which contains white pine bark combined with various other drugs, including wild cherry bark, blood root, spikenard, balm of Gilead buds, and sassafras, with morphine acetate and chloroform. Many other preparations that are much used in the United States contain vegetable drugs as unfamiliar to British prescribers as are some of those mentioned above, and on this account it is of interest to call attention to a monograph on "American Medicinal Barks," recently written by Miss Alice Henkel.* *35 different barks are described* and illustrated, the intention of the compiler being to provide accurate descriptions of these drugs as a guide to growers, collectors, and druggists. Reference may here be made to the brief notes on the therapeutic action of some of the barks mentioned. White pine bark (Pinus strobus) is used as an expectorant; its taste is mucilaginous, bitter-sweet, and astringent. Butternut bark (Juglans cinerea) has a faint odour and an acrid, bitter taste; it is a mild cathartic and tonic. Prickly ash bark (Xanthoxylum americanum and other species) has a very pungent and somewhat bitter taste. It is employed medicinally on account of its alterative, stimulant, and sialagogue properties and in rheumatism is credited with increasing the volume of the secretions. It is used externally as a counter-irritant. The bark of the root of the cotton plant (Gossypium hirsutum or herbaceum) appears to have emmenagogue properties. In the hands of the physician it may be a valuable remedy, but it is largely employed among the coloured people for illegitimate purposes. The bark is free from odour, but it has a faintly acrid and astringent taste. Dogwood bark (Cornus florida) is used in medicine for its astringent, tonic, stimulant, and febrifuge properties, and in the fresh state it is said to be emetic. The bark of the root was official in the United States Pharmacopœia from 1830 to 1890. During the Revolutionary war it was much employed as a substitute for cinchona bark. It has an astringent, bitter taste, but practically no odour. Fringe-tree bark (Chionanthus virginica) possesses tonic, febrifuge, and laxative properties, and is also said to have a narcotic action. Cramp bark (Viburnum opulus), as the name indicates, is used as an antispasmodic, and it is also said to possess tonic and astringent properties. It is practically odourless and the taste is astringent and bitter. Black haw bark (Viburnum prunifolium) is credited with similar properties, and is a more familiar remedy to us. Both cramp bark and black haw are largely prescribed in the form of a compound elixir in the treatment of dysmenorrhœa and other uterine ailments where a uterine tonic and sedative remedy is required. Of the barks that are employed to a less extent the following are described in the Bulletin: Aspen (Populus tremuloides), a tonic employed in the treatment of intermittent fever; bayberry (Myrica cerifera), tonic and astringent; ironwood (Ostrya virginiana), tonic, alterative, and antiperiodic; white oak (Quercus alba), a powerful astringent, also an antiseptic; magnolia (Magnolia acuminata and other species), tonic and sudorific, used in pyrexial states; tulip poplar (Liriodendron tulipifera), a bitter, stimulant tonic, useful in fevers, rheumatism, and digestive disorders; spicebush (Benzoin benzoin), a vermifuge and also given in fever; wafer ash (Ptelea trifoliata), possessing tonic properties and used in fevers and as an anthelmintic; moosewood (Dirca palustris), a decoction of which is used for its emetic, laxative, sudorific, and expectorant properties; and buttonbush (Cephalanthus occidentalis), a febrifuge, expectorant, and diuretic.

* Bulletin No. 139, Bureau of Plant Industry, U.S. Department of Agriculture, Washington, D.C., 1909, pp. 59.

THE DANGERS OF VERONAL.

ON July 9th, at the Kensington coroner's court, Mr. C. Drew held an inquest upon an artist who had been found drowned in his bath. It was given in evidence that the deceased had been in the habit of taking large doses of veronal to induce sleep and that on two occasions he had been found insensible from the effects of the drug. He had been attended by Dr. G. J. Bagram, who gave medical evidence to the effect that he was satisfied the fatality was due to the same cause, although the post-mortem findings indicated asphyxia from drowning. In his opinion the deceased, whom he did not see after the accident until life had been extinct for some hours, had taken veronal which did not produce an immediate effect, but the hot water of the bath had accelerated the action of the drug, causing sudden drowsiness which led to the death by drowning. The explanation certainly seems a reasonable one, for we can hardly conceive of any person drowning himself either by accident or intention in a bath whilst in a condition of consciousness. An open verdict was returned, and the case serves to direct attention once more to the dangers of a drug habit that has now been responsible for several fatal accidents.

NATIONAL FOOD REFORM ASSOCIATION.

To the Editor of THE LANCET.

SIR,—Will you kindly allow me to inform your readers that the National Food Reform Association has now opened offices at 178, St. Stephen's House, Westminster, S.W., overlooking the Houses of Parliament. May I also mention that we have just published a penny booklet entitled "Economical Dishes for Workers," which will be found useful by district visitors, temperance and other social workers. It contains a number of simple recipes which have been tested and have proved both popular and economical. A specimen copy, with full particulars regarding the association, may be obtained by sending a stamped, addressed envelope to the secretary at the above address.

I am, Sir, yours faithfully,
NEVILLE S. LYTTON, Chairman.
178, St. Stephen's House, Victoria Embankment, Westminster
Bridge, London, S.W., July 9th, 1909.

THE COMPOSITION OF ARGEMONE MEXICANA.

SINCE the year 1841 there has been considerable discussion as to whether *Argemone mexicana* contains morphine. This drug has been used to some extent in the treatment of morphinism, and reference was made to its use in THE LANCET of March 2nd, 1907, p. 629. From the experiments of M. W. Dulière, described in the *Bulletin des Sciences Pharmacologique* for May, it now seems clear that the drug does not contain morphine. Samples of the dried and fresh plants were carefully analysed, and it was found that the alkaloids present consisted of protopine and berberine, the reactions for morphine giving negative results. It is satisfactory to know more definitely the composition of this drug as its therapeutic work may now be assessed at its true value. It is of interest to note that a proprietary article named "Antimorphine," which has been vaunted for the treatment of the opium habit, was found by M. Dulière to contain morphine. As this remedy is said to be prepared from *Argemone mexicana* M. Dulière draws the conclusion that the morphine in "Antimorphine" must have been added intentionally.

FRENCH DICTIONARIES.

To the Editor of THE LANCET.

SIR,—In reply to "Guillaume," who asks for a small French dictionary (in French) in THE LANCET of June 26th, the smallest I know is Bescherelle, 13cm. × 9cm. × 2cm., half bound.

I am, Sir, yours faithfully,
Geneva, July 7th, 1909. (DR.) A. CORDES.

To the Editor of THE LANCET.

SIR,—I note an inquiry for a satisfactory French dictionary in THE LANCET of June 26th, on p. 1877, and believe that "Guillaume" will find Bellows's Dictionary for the pocket to be the best, although it contains French and English. I have found all the words explained which "Guillaume" mentioned and might cite one. "Conduire *v.a.* (*Table* 51—for full conjugation of this irregular verb) to conduct [emmener) to take: to lead: to guide [accompagner) to take [diriger) to direct [voiture) to drive [nav.) to steer [marchandises) to carry [affaires) to manage: to carry on [fluides) to convey [fig.) to conduce. Se—,To find one's way: to be conducted: to behave (one's self) to go on." While, on the same page, underneath I find: "Conduct *v.a.*, conduire (to, à] introduire (into, dans] diriger [des opérations, etc.] —one's self, se conduire: se comporter."

I have used this little book for more than 30 years and seldom found it fail. Of course, *Littré* is indispensable for a full knowledge of details; for example, two columns are required for this one word and the synonyms given are *mener* and *guider*.

One hopes that another Bellows will arise to serve us equally well in German and Italian.

Yours truly,
Perth, July 10th, 1909. A. R. URQUHART.

*** We can endorse our correspondent's opinion of Bellows's Dictionary, which contains an extraordinary amount of information in a small bulk, but we would point out that "Guillaume" inquired for an all French dictionary.—ED. L.

"WHERE IS IT?"

RECENTLY a rare and curious little booklet for the waistcoat pocket, entitled "Where is it? a Handbook to the Urinals, &c., of London," and published at 6*d.* in 1852, changed hands at £4 5*s.* In 1851, the year of the Great Exhibition in Hyde Park, it was found difficult in the absence of public urinals to promote public decency, so this little booklet was issued as "a friend in need," indicating where the nearest urinals were to be found in London. The streets where the urinals were situated are mentioned in alphabetical order. Even so late as the early "eighties" some such guide would often have been of service, for it must be remembered that the princely urinals at the disposal to-day of the Londoner are a feature of modern London.

◆

Red Dwarf is advised to call on the two practitioners, whose seniority and position make them prominent in medical circles, and ask their opinion. His course is dependent upon local views.

P. L. G.—The only general advice we can offer is that such certificates should not be given.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. W. H. George: Anæsthetics.
FRIDAY.—3 45 P.M., Lecture:—Mr. W. Wallis: Mouth and Teeth.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.

TUESDAY.—4.30 P.M., Reception at the London Temperance Hospital.

OPERATIONS.

METROPOLITAN

MONDAY (19th).—London (2 P.M.), St

P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9 30 A.M. and 2 30 P.M.), Gt Northern Central (2 30 P.M.), West-

Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index to Vol. I. of 1909, which was completed with the issue of June 26th, and the Title-page to the volume, were given in THE LANCET of July 3rd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1909 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 15th, 1909.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind	Rain fall.	Solar Radio in Vacuo	Maximum Temp. Shade	Min Temp.	Wet Bulb	Dry Bulb	Remarks.
July 9	30 00	N.W.	...	123	73	62	55	60	Fine
" 10	29 60	N.W.	0 30	101	63	55	55	58	Cloudy
" 11	29 96	N.W.	0 04	109	60	55	55	57	Cloudy
" 12	30 02	N.	0·11	93	63	52	51	53	Overcast
" 13	30 07	W.	...	106	71	53	55	60	Fine
" 14	30 12	W.	0·27	126	74	59	59	63	Cloudy
" 15	30 11	W.	0 05	120	68	58	59	62	Fine

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THE LANCET, JULY 24, 1909.

A Lecture

ON

THE DESIRABILITY OF EARLY OPERATION IN ACUTE CASES OF APPENDICITIS,

TOGETHER WITH AN ANALYSIS OF 190 SUCH CASES OPERATED ON AT ST. GEORGE'S HOSPITAL.

Delivered at St. George's Hospital on June 29th, 1909,

BY G. R. TURNER, F.R.C.S. ENG.,

SURGEON TO, AND JOINT LECTURER ON SURGERY AT, ST. GEORGE'S HOSPITAL.

GENTLEMEN,—I wish to bring before you this afternoon my experience of operation on appendicitis during the acute stages. The question of its necessity may be rather hackneyed, but though much has been written and said about it, it is very far from being settled, and many valuable lives are lost because it is *not* settled, because there is a false and unjustifiable timidity in facing the necessary. We no longer hesitate as surgeons of 50 years ago did about operating at once on a strangulated or obstructed hernia. I submit that appendicitis, which may be nearly as dangerous, in the years to come should follow the good example of hernia and very rarely escape its antidote—early operation. Four years ago, in 1905, at a discussion before the Royal Medical and Chirurgical Society, initiated by Sir Frederick Treves, the experience of various large hospitals on acute and chronic cases of appendicitis was brought forward. On analysing these at the time of the discussion in 1905 I found the number of cases operated on between attacks in five large London hospitals was 1209; seven of these died, making a mortality of ½ per cent. Other cases, more acute, and operated on during the attack, were 1568, of whom 376 died, an average mortality of 23·9 per cent. Of 795 cases (not classified) operated on at another large hospital 136 died. The total number of cases altogether brought forward was 3572, and of these 519 died, an average mortality of 14·2 per cent. In a summary by Mr. Stephen Paget and Mr. Stanley Boyd published later it appears that there was in 1361 cases operated on *during a period of quiescence* a mortality of 1·1 per cent.; *abscess without general peritonitis*, 863 cases, 83 deaths, mortality 9·62 per cent.; *operations when general peritonitis was present*, 242 cases, with 177 deaths, mortality 73 per cent. Such, then, was the experience of London surgery up to 1905, but we must remember that these statistics included a large number, if not all, of the early operations when operators were less experienced than they now are, when cases were left longer, and the methods employed not nearly so safe or so satisfactory. For instance, in our own Hospital here, St. George's, between the years 1892 and 1898 no less than 28 per cent. of the acute cases died after operation; between the years 1900 and 1905 only 15 per cent. We must remember, too, that more than half of the cases between the years 1892 and 1898 were admitted primarily into our medical wards and came, with the views of treatment then prevailing, under the surgeon's care later perhaps than they do now when it is the rule rather than the exception for them to go straight to a surgical ward.

Looking at these statistics, which give a mortality of only ½ per cent. or 1 per cent. for cases operated on between attacks, as against the terrible mortality of nearly 24 per cent. of those operated on during attack, it would seem at first sight that they suggest that operation during attack should not be undertaken; but I would ask you to remember that this great mortality of cases operated on during an attack was due to the fact that they had been left until *late*, and certainly in many cases until *too late* for satisfactory surgical interference; and in bringing before you this afternoon my own statistics of my operations on acute cases I am going to give you the experience of a surgeon who operates as early as he can, but not by any means as early as he would like. It is not the operation which is, or should be, the dangerous thing, it is the condition too often found at the time of that operation. Some surgeons go so far in their advocacy of early operation as to say that in a case seen *ab initio* by a medical man no abscess should ever be allowed to develop, and certainly if all cases, when a reasonably sure diagnosis has been made, were at once operated on abscess could not so often supervene, nor would other complications be found that have led in the past to the high mortality that was disclosed in 1905.

How often has waiting for a brief while seemed successful! The initial fever passes, the tenderness and abdominal rigidity perhaps subside, or nearly so. The bowels, duly castor oiled, act, and both patient and medical man hope and think the worst is over—for a day perhaps pulse and temperature are down to normal, and then possibly on the much-talked-of fifth or sixth day, or later, up the temperature runs, the pulse is once more rapid, the aspect of the patient changes, anxiety is on his flushed countenance, his tongue is furred and brown, his lips dry and cracked, his eye bright with fever, [illegible] be felt in hi [illegible] abscess or [illegible] ditions may be accompanied by but few general symptoms, but should always be suspected after an appropriate lapse of time. That general quietude may be associated with grave local symptoms is yet another argument for early operation.

Turning to my own acute cases, all of them hospital ones, for I prefer in the matter of statistics not to include private cases which cannot be verified, during the years 1894 to 1905 at this hospital I operated on 101 acute cases during the attacks: 57 of these had abscess, 6 of them died, 44 had no abscess, 4 of these died, making altogether a percentage mortality of under 10. During the years 1905 to 1909, tables of which cases by the kindness of Mr. G. D. H. Carpenter I have here, I operated on 89 acute cases during attacks: of these 36 had abscess and 3 of these died, and of the other 53 with no abscess 2 died, making an average mortality of under 6 per cent. Putting the whole of these *acute* hospital cases together, from 1894 to 1909 there are 190 cases with 15 deaths and an average mortality of 7·8 per cent. Were my acute private cases added this mortality would be reduced to about 6·5 per cent. Analysing these 15 deaths in the 190 hospital cases, in all the appendix was gangrenous, in nine cases abscess was present: one patient died on the table from chloroform, two were admitted almost moribund, one was complicated by abortion at the *six month, seven had general peritonitis* at the *time* of operation, and in two the sloughing had extended from the appendix to the neighbouring cæcum. I think I may say, therefore, that none of these fatal cases would have recovered without operation, and were I to exclude, as I reasonably might, the death from chloroform and those who were already all but moribund from peritonitis, the mortality of the hospital cases of 7·8 would be reduced to 6·3 per cent. I have had 39 cases running with only one death, and my last 42 cases without any, although many of these were gravely ill with sloughing of the appendix and abscess consequent thereon. I have never refused to operate on any case, however bad. These are not statistics of selected cases, but show the mortality of acute (often late) cases operated on during attacks, not the mortality of all cases, including those operated on between attacks; the consideration of the latter I am purposely excluding this afternoon.

Some years ago, and indeed now with many medical men, a policy of waiting was, and is, advocated—waiting till the clouds roll by; but sometimes they never do do this, and then the unfortunate patient is operated on under disadvantageous circumstances at a late period, when abscess, perforation, or mortification may be present; for not only has he waited, but usually his damaged intestine has spent the waiting time in resisting colon-disturbing enemata and the attacks of calomel and other noxious drugs. There was a time when, realising that abscess might be forming, some people advocated, and for all I know may still advocate, deliberate waiting until that abscess formed and the pus localised. With this treatment of so dangerous and uncertain a condition I cannot in the least agree. The causes of delay are many; too often the patient or his friends are responsible; sometimes an excess of examination by the latest scientific methods is only waste of valuable time; sometimes the doctors have "Let I dare not wait upon I would." Here is a typical case—alas! also a true one (not in my own practice).

A young woman experienced sudden pain on a Monday evening in the right side of the abdomen and was seen by a medical man the next morning. The pain increased during the day and was very severe at night; abdominal distension came on, the temperature rose to 101° F, and the pulse was rapid; fomentations were applied and morphia was given. The blood was examined; there was no leucocytosis. By Wednesday the pain was severe and constant diarrhœa set in. There were great restlessness, constant pain, and increasing distension; a flatus tube was passed; more morphia was given. On the Thursday the pulse went up to over 150, the patient's colour and appearance became very bad, and an operation was performed late in the day. There were a large burst abscess and general peritonitis. In spite of transfusion and saline injections the collapsed patient died a few hours afterwards. Do not such cases cry aloud for *early* operation? Can they by any possibility be seriously taken as arguments against operating during an attack? Yet these cases or similar ones go to swell the statistics of mortality of "during attack" operations. What we want is the result of *early* as opposed to *late* operation and waiting, not the result of operations on "too late" cases. Do not be put off by the fatal quiet induced by morphia, by blood counts, or by diarrhœa; it is better to be "bloody, bold, and resolute"—to use your clinical instinct and not be afraid to do an early, and if early a safe and easy, operation.

In my list of cases you will not have seen, nor have I used the word "fulminating," although I know that some cases are as bolts from the blue, very rapid in their disaster and fatal, yet I think that these fulminating cases are fewer than is generally thought to be the case, and I cannot help suspecting that sometimes, not having perhaps properly realised the gravity of early symptoms, we may have got under the umbrella of fulmination to excuse the length of the latent period of our diagnosis. Burst abscesses and perforations of an already inflamed appendix may give rise to all the symptoms of fulmination. Let us consider for a while the arguments for and against early operation, and remember that I do not advocate it unless it is certain that there is something gravely wrong in the abdominal cavity. Appendicitis in all its stages comes under this definition. First of all it is argued, and reasonably, that one cannot be sure that appendicitis is present, especially perhaps in women, where the ovaries or uterine appendages on the right side may be the cause of the trouble. Rectal or vaginal examination is here specially indicated, though often exploratory operation alone can clear up the mystery. Like other surgeons, I have met with cases sent up for operation as appendicitis which simulated it, but were not appendicitis. Let me briefly relate to you one or two of these.

The first case was a woman, who two years previously had been in a large London hospital suffering from what was called appendicitis. When she came to St. George's Hospital there was marked tenderness in the iliac fossa; she was sick and faint and had shivering, her attack commencing by pain low down in the right abdomen. On opening the latter through the right rectus muscle no trace of large intestine was to be found. There was acute volvulus of the small intestine in the right hypochondriac region. Considerable difficulty was experienced in finding the cæcum; both it and the appendix, which was large, were found healthy but abnormally placed in the left hypochondrium, and the large intestine was obviously very much less in extent and smaller than usual; the other viscera were normal. She made an uninterrupted recovery. In this case, then, there was that fœtal condition of the intestine met with in an early stage of our development. Her symptoms pointed, with the history, to appendicitis rather than to acute intestinal obstruction. Early operation in her case was of the utmost possible benefit.

Another case, again sent up as appendicitis, with sudden severe abdominal pain, marked shivering, rapid pulse, tenderness chiefly in the right iliac fossa and vomiting, proved to be a retro-peritoneal hernia; about 2 feet of collapsed small gut were dragged out apparently from the fossa duodeno-jejunalis. There were old peritoneal adhesions around and a stercolith in the appendix which was removed. The boy made an uninterrupted recovery.

Yet another case: a woman seized with severe abdominal pain, at first general, quickly shifting to the right iliac fossa. There was nausea but no vomiting; there was a history of cellulitis and peritonitis two years previously. The pulse was 120 and the temperature was 101° F. She was drowsy from opium that had been given to her before admission. The abdomen was distended, and there was tenderness which wa most marked in the right iliac fossa. This case on operati proved to be a ruptured ovarian cyst: originally springing the left side, it had ruptured on the right. The cyst w deeply situated and adhered to adjacent bowel. The rig Fallopian tube was dilated with fluid and the right ovary w cystic; both were removed, as was also the ovarian cys The patient made a good recovery.

These three cases, then, simulating appendicitis, we operated on early and successfully. A policy of waitin might have been fatal in all.

It has not as yet been my lot to cut down on what has bee diagnosed as appendicitis and to find nothing. I have, hov ever, found both perforated gastric and perforated duoden ulcer. Early operation in each case saved the patient's lif So much for pardonable mistakes in diagnosis. If you kee to the rule of operating when you are sure there is somethin gravely wrong inside the abdomen, I do not think you your patient will come to much harm. I am ready to allo that certain diagnosis is not always possible, but I contend that nowadays the experience that we all have ha makes the diagnosis of appendicitis not so difficult or doubtful as it once was.

Let us consider for a moment what happens if a case appendicitis is left without operation. Recovery, tempora or permanent, may ensue, but the temporary recoveries mal a large percentage. Mr. H. S. Pendlebury, some years ag writing to me as to the cases in this hospital between the yea 1892 and 1898, says of them: "An interesting fact is th one attack predisposes to subsequent attacks in about 30 p cent. of all cases." With reference to permanent recoverie some that are thought to be permanent are not so. remember the case of a friend of mine who had a very b attack of appendicitis in the days when operation was co sidered as a last resource. He was not operated upon. Som what to the surprise of those who were looking after him, recovered, and he lived for some 15 years or more, nev quite well, haunting places like Carlsbad, Harrogate, ar other health resorts, but apparently with no second attack his trouble. After being obscurely ill with abdominal sy ptoms for some two or three weeks he died comparative suddenly. No operation was done, no post-mortem exan nation was made, but I cannot help thinking that his dea was connected with his old enemy—appendicitis. If recove does not take place, the case, if left, will go on abscess, to gangrene, or to perforation. Natural recover after abscesses bursting into the intestine or through Dougla pouch are on record, but are rare. One of the latter I h had recently in my own practice, but I take it that no would argue that if abscess is present operation should not performed. The same also with gangrene and with perfo tion. Looking at the cases of what I have called tempora recovery, surely the wise man who has "temporaril recovered will have his appendix removed. When I s this, I am aware that some eminent surgeons would prefer see the appendix transplanted to the front of the abdomin wall, allowing it, if necessary, to be used as a means treatment of the colon, and that a distinguished scient regards the organ as likely to delay the onset of old age. F myself, I would chance the latter and would agree with t remark of an eminent physician that he would sooner ha his diseased appendix in his pocket than stitched to groin. It is, in my opinion, when colitis only is present th appendicostomy rather than appendicectomy is indicated.

Amongst the arguments against operation is the inju done to the abdominal wall, but let me here remark that done early no drainage-tube or gauze is required, and th the gridiron incision, by which the abdominal muscles a separated rather than divided, and the incision through t sheath of the right rectus muscle leave the abdominal wal practically uninjured and sound. The person who waits ar operates late has to think of the abdominal wall; not so who operates early. Early operation is easy and, I conten safe—safe, I mean, in the hands of a surgeon accustomed abdominal work and prepared to deal with complications other unexpected conditions that he may meet with. I not advocate early operation by the inexperienced operat in out of the way country places, where perhaps prop assistance at the operation and in giving the anæsthetic not at hand. Such cases must be left to wait until adequa arrangements for operating can be made. The abdomin wall then should only be weakened, and then not alway when gauze packing and tube drainage are required. If there be a subsequent small ventral hernia it is, as a rule, the result of *late* operation. It is not irremediable, and after all but a small price to pay for one's life.

The danger of peritonitis following operation has been advanced as an argument against it, but surely the danger of peritonitis is much greater in all cases if the patient is left. So much for some of the arguments against early operation. The arguments for it are that in itself it is not dangerous; that when done early the abdominal wall is not damaged; that recovery after it is rapid, there is no prolonged convalescence with tubes and gauze packing; that the appendix is dealt with before abscess and other septic complications have time to develop; that such risks as pelvic, post colic, subphrenic, or even secondary liver abscess are avoided; that any peritonitis present is not, as a rule, of that general septic variety seen in the later stages; that the patient has one illness, and gets rid once for all of a constant source of danger—a matter of moment to working men and to those whose lives may have to be lived in outlying parts of the Empire or in any Ultima Thule of our own country; that many grave conditions of the appendix and its vicinity are not always accompanied by the danger-signals of rigor, high fever, rapid pulse, rigid abdomen, vomiting, &c., and so there is developed a false and fatal sense of security if a waiting policy is practised.

I have not time to say much about the details of operation in these bad late cases when abscess or gangrene of the appendix is present, except to impress on you the necessity of packing the neighbourhood with either gauze or sponges, while the contaminated parts are being dealt with, and to open any abscess that may be present with the utmost possible care. No pulling or slicing can be allowed here. Personally, as far as possible I relieve the tension of the abscess gradually by a small opening and mop up the foul matter as it exudes by stick sponges, and although it is now the fashion of most surgeons to discard the use of the marine sponge, I cannot help thinking it has much more capillary attraction and sucks up foul discharges and blood much better than the ordinary swab; in fact, I agree with Sir W. Watson Cheyne and the late Mr. Greig Smith in infinitely preferring a sponge to a swab. In my private cases I never use a sponge twice; at the hospital here only those that have been used for clean cases are sterilised and used again. Adequate tube-drainage and proper packing with gauze are most important when the septic or abscess area is deeply situated. I make no counter-openings, never irrigate or wash out the peritoneal cavity, and regard the gauze as packing only. Secondary abscesses and second operations are usually due either to lack of proper precautionary drainage or the premature removal of the gauze packing. I prefer, in spite of the greater pain and inconvenience, to have this done gradually day by day than to do it at one sitting under an anæsthetic. The latter, *me judice*, is not always a safe proceeding. I have seen two cases doing well up to this time develop after this wholesale removal a fatal peritonitis.

Since 1904 I have removed the appendix in all cases operated on, except five, four of them abscess cases. I never leave it now if I can see or easily feel it; only when I think that a search for it would endanger the patient's life, or when the obvious sloughing and suppuration have apparently already destroyed it, do I not attempt to remove it. Gauze packing gives one a very free hand in this respect—most removals can now be safely accomplished. It is very necessary to remove all stercoliths. I have known a portion of one accidentally left cause an abscess a year after the first operation when the appendix itself was taken away. With reference to secondary abscesses, except for one of the liver (in private) and one subphrenic one, I had had till recently in all my hospital and private cases but two, both near the seat of operation; but in the last month it has been my lot to meet with two more: one in this hospital two weeks after the original operation, when the patient was apparently well, necessitating a second laparotomy, and another (in private) which burst through Douglas's pouch. This latter was due to the large drainage-tube coming out prematurely, an accident that was not discovered for some 12 or more hours. All except the case of liver abscess recovered. One private case, however, had a very enduring fæcal fistula due to some sloughing of the cæcum away from its connexion with the appendix. The fæcal fistula which follows sloughing of the appendix itself is practically nearly always of a temporary nature.

About a month ago I had to deal here with an epidemic of acute cases of appendicitis, operating on no less than ten emergency cases, six in 24 hours. There were, I think, three other cases, making in all 13 in three days. All recovered. Appendicitis often seems to come in epidemics, and I think I have noticed that such epidemics follow some weeks or months after epidemics of influenza of the intestinal variety, but of this I am not sure.

In conclusion, gentlemen, I think I may say that if such acute cases are treated, as I submit they should be, by early operation, when once the condition is clearly diagnosed, the mortality of such early operations, although done during the attacks, should not be, and will not be much, if at all, greater than those done between attacks; in other words, I attribute the present mortality of operations during attacks almost entirely to delay, and against that delay I would wish to protest, and looking at its evil consequences to warn you and others who, in the future, will see this dangerous and insidious disease in its early stages.

An Address

ON

MODERN PROGRESS IN OUR KNOWLEDGE OF THE PATHOLOGY OF GENERAL PARALYSIS.[1]

Delivered before the Hamilton Medical Society, Ontario, on April 14th, 1909,

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THE remarkable progress in our knowledge of the pathology of general paralysis that has been achieved in the past six or eight years is of equal importance from both a theoretical and a practical point of view. On the theoretical side it has thrown much light upon the pathogenesis of a striking malady and has explained much of the actual mechanism of various obscure morbid processes, while on the practical side it has served to clarify our ideas about the boundaries of the disease known as general paralysis, to define sharply the disease, to settle the vexed problems of its etiology, and, above all, to provide us with ready means for making an accurate diagnosis at an early stage of the affection.

Our knowledge has expanded in two main directions, histological and chemical, and although the latter will principally be dealt with here I shall first say a little about the former. Thanks to the labours of Nissl and Alzheimer we now have an anatomical picture of general paralysis as precise and characteristic as any in the range of pathology, and this very fact alone, that we can by an anatomical examination mark off the affection from those resembling it, is of the greatest practical interest. We are to-day in a position completely to disregard the clinical diagnosis of a given case and unhesitatingly to proclaim from only the histological characters of the brain whether it was or was not a case of general paralysis during life.

It would be impossible here even to enumerate all the histological changes found in this affection, let alone to discuss the difference between them and those found in other affections, and I will simply give a rapid review of the changes in the cortex that may be considered most characteristic.

In the *pia* the most striking feature is the intensity of the infiltration and the great variety of cells present. Of these the chief are lymphocytes, plasma cells, and mast cells. The infiltration is thus not confined to one kind of cell, as is the case with tertiary syphilis. The pial changes are essentially infiltrative and not hyperplastic, as is in many other diseases. They cannot be correlated with the cerebral changes as they can in tertiary syphilis, for in general paralysis the pial and cerebral changes run an independent course. The plasma cell, the recognition of the distribution of which is so important in making a histological diagnosis of general paralysis, has the following features. The nucleus is enclosed in a thick membrane and rarely shows mitosis. The protoplasm is metachromatic, is darker at the periphery than around the nucleus—where it is often yellow—and gets lighter as the cell ages; it often shows vacuolation and degenerative changes.

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[1] The address was illustrated by microscope and lantern slides, and was accompanied by a demonstration of the chemical tests referred to.

The *ganglion cells* show all stages of degeneration and sclerosis. The most marked change is the destruction of the orderly arrangement of the different cell layers, which occurs to an extent never met with in any other condition.

The *glia* proliferation is very diffuse and extreme. It differs from that found in other diseases in the rich formation of large thick fibres which are intimately connected with the vessel sheaths. The superficial layer of the cortex is especially affected. Another characteristic feature is the appearance of giant glia cells, which otherwise occur only in cases of luetic endarteritis.

The destruction of the *myelin sheaths* and the secondary degeneration is marked by its widespread extent and intense degree.

The most characteristic changes in general paralysis are, however, in the *blood-vessels*. These show the most extraordinary proliferative activities, and throughout the cortex a number of new vessels are formed by the process of budding. The new formation is not confined to areas of softening, as it is in most diseases. The vessel intima is greatly thickened and vascularisation is often found in it. The adventitia is similarly thickened but the media only slightly. Cell proliferation is thus confined to endothelial and adventitial cells. The change that has the greatest diagnostic import is the character of the infiltration of the lymph sheath of the adventitia, the space of which is very greatly dilated. Here we find an enormous infiltration with both lymphocytes and plasma cells; other cells, such as mast cells, may also be found, but not *Körnchen* cells. *Körnchen* cells, which carry the fat, play an opposite rôle to plasma cells and lymphocytes, for they are found in the vessel sheaths in arterio-sclerosis and only in softened areas in general paralysis, whereas plasma cells are found in both vessel sheaths and softened areas in arterio-sclerosis and only in the vessel sheaths in general paralysis. Outside of, and attached to, the vessel walls in general paralysis are found the curious *Stäbchen* or rod-shaped cells; these occur in no other disease, at least not in the typical elongated form. Side by side with all these proliferative changes in the vessel wall are found some of a retrogressive nature, such as degenerations, of which the hyaline form is the most frequent. These are, however, always less pronounced than the proliferative ones, and never dominate the picture as they do in various forms of arterial disease.

The picture made up by the above details is one that is never found in any other disease, so that, as was before mentioned, we can with absolute certainty say whether a given brain came from a case of general paralysis or not.

We now come to the progress that has been made in the clinical pathology of the disease, and this is almost exclusively concerned with the examination of the cerebro-spinal fluid. The operation of lumbar puncture is so simple that I will not take up your time with any description of it, though I may add a few additional points that experience has shown to be important. The interval between the fourth and fifth lumbar spines is preferable to that between the third and fourth, as being wider. An iridium needle is preferable to a steel one, as being less liable to break. One should never withdraw more than at the most 10 cubic centimetres of fluid at a time. The sitting posture is more convenient in the case of lunatics, as it is then easier to keep to the middle line if they move at a critical moment. The patient should invariably lie down immediately afterwards for the rest of the day. Lumbar puncture should not be performed in a case of tumour of the brain. If these precautions are observed, and strict asepsis ensured, then it may with confidence be stated that there is no risk of any complication or danger arising as the result of the operation.

A large number of characters of the cerebro-spinal fluid may be examined, but only three are of any great practical interest and diagnostic import. They are the pressure of the fluid, the proteid content, and the cytological features. The pressure of the fluid may be measured by allowing it to flow into a bent tube containing saline and observing the height of the rise in the vertical arm of the tube. The value which this observation has in diagnosis is chiefly a negative one—that is to say, the finding of an increased pressure is not a specially weighty piece of evidence in favour of the diagnosis of general paralysis as it may be made in several other affections, notably in tumour of the brain; on the other hand, as an increased pressure is so remarkably constant in general paralysis one would be very chary of making a diagnosis of the disease if the pressure were not raised. The rise in pressure may be very great; I have punctured several cases of general paralysis in which it was over 800 millimetres of mercury.

The proteid[2] of the normal cerebro-spinal fluid is exceedingly slight in amount. It is chiefly, and perhaps altogether, of the nature of globulin. In general paralysis the amount of proteid is increased often four or five-fold. Albumin is constantly present, but probably the main bulk of the proteid is globulin. There are a considerable number of different kinds of globulin, but the main interest in general paralysis centres round one variety which is known as euglobulin. This is so because not only is it present in the cerebro-spinal fluid of general paralysis in considerable quantity, but especially because it is now known to be the carrier of the interesting antibody that is operative in the Wassermann reaction of which we shall speak in a moment. Euglobulin differs from serum globulin in several particulars, the chief one being that it is precipitated in a 33 per cent solution of ammonium sulphate, whereas a strength of 50 per cent. is necessary to precipitate serum globulin.

Of the chemical tests for proteid used in this connexion some give a positive reaction with both the normal fluid and that of general paralysis, though in a much more pronounced way in the latter case, while others give no positive reaction in the normal. Of the first class, the two of most convenient application are those generally used in testing for the presence of proteid in urine—namely, the heat and the nitric acid test. In the former instance, the fluid is first acidified, and it is then better to boil the whole length of fluid instead of only the upper part as is done in the case of urine. The Heller nitric acid test is applied in the usual way by gently running some fluid on to the upper surface of cold concentrated nitric acid. By these tests only a trace of proteid is found in the normal, while with general paralysis the precipitate or ring formed is of a considerable density.

Of the second class of tests I will here mention only two. The first was described a few months ago by Noguchi o New York and is carried out by adding half a cubic centimetre of a 10 per cent. solution of butyric acid in physiological saline to a tenth of a cubic centimetre o cerebro-spinal fluid and heating the mixture to boiling point. A tenth of a cubic centimetre of 4 per cent. sodium hydrat is then added to the mixture which is again heated. Whe the reaction is positive there appears within half an hour no only a white cloudiness, which is of no significance, but peculiar flocculent precipitate. The second of these test was described by Dr. G. W. Ross and myself in a paper rea last January before the Ontario Academy of Medicine,[3] and since that time we have had considerable opportunity of verifying the conclusions there advanced. It consists in gently pipetting some of the fluid on to a saturated solution of pure neutral ammonium sulphate. A positive reaction is manifested by the appearance of a characteristic, thin sharp white ring at the junction of the two fluids; this within a few minutes assumes a fine mesh aspect. These two tests are constantly positive in cases of general paralysis; they are sometimes so in cases of tertiary lues of the nervous system, but they are always negative in all other forms of mental disease and in the normal.

The cell content of the fluid should be studied in two ways. First, an absolute count should be made, and this should be stated in terms of cells per cubic millimetre and not in terms of cells per field as is often done. For this purpose it is unnecessary to centrifugalise the fluid. The Fuchs-Rosenthal special counting chamber may be utilised, or the ordinary blood-counting chamber may be used by a still simpler method

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[2] A full account of this subject is given in "The Proteid Content of the Cerebro-spinal Fluid in General Paralysis," Review of Neurology and Psychiatry, June, 1909.

[3] On the Use of Certain New Chemical Tests in the Diagnosis of General Paralysis and Tabes, Brit. Med. Jour., May 8th, 1909, p. 1111.

I described some two years ago.[4] Secondly, a differential study of the cells should be undertaken. In meningitis this can be done with sufficient accuracy during the absolute count by simply noting the relative frequency of mononuclear and polymorphonuclear cells. In general paralysis, however, a special procedure is necessary so as to permit of a more precise study of the different kinds of cells present. By far the best method for this purpose is the one introduced by Alzheimer. Two volumes of 96 per cent. alcohol are added to one of the cerebro-spinal fluid; the deposit obtained after centrifugalisation is hardened in alcohol and ether, and sections cut and stained along recognised lines.

In the normal cerebro-spinal fluid cells are rare. One never finds more than five to the cubic millimetre, and they are practically always to be classified as small lymphocytes. In general paralysis the cell count is almost always increased. The diagnostic significance of the increase varies with its extent. A count of 40 to 50 cells is not infrequently met with in tertiary syphilis, though in no other chronic disease except general paralysis—including, of course, tabes. A cell count of over a hundred, and I have met with counts as high as a thousand in this disease, occurs in no affections except general paralysis and acute meningitis.

The most striking feature of the cytological picture in the cerebro-spinal fluid of general paralysis is, next to the number of cells present, the great variety of them. It is rare in any other affection to find more than two or three different types of cells, but in general paralysis the number of different types is so great as to be indeterminate. The cell most frequently met with is, as in the normal, the small lymphocyte; usually two-thirds of the cells present are of this nature. Other important kinds found are polymorphonuclear cells, plasma cells, endothelial cells, phagocytes and mast cells, usually in this order. The cell picture of the cerebro-spinal fluid in general paralysis is, then, a highly characteristic one.

We have last of all briefly to mention the sero-diagnosis of general paralysis. I have time here only to outline this in the most sketchy way, but those who are interested may be referred to a review of the subject I have just published in the April number of the *American Journal of Insanity*.[5] Of the different methods that have been suggested only two will here be mentioned—the Wassermann-Plaut and the Porges-Meier. The essence of the former method consists in testing whether the cerebro-spinal fluid can combine with syphilitic material to bind the complement present in normal serum. Whether the complement is bound or not is ascertained by noting whether the mixture is able to dissolve the red blood cells of any animal in the presence of a hæmolysin that is specific for these cells. If the mixture can do this, then the complement, which is necessary to act with the hæmolysin in bringing about the solution of the cells, must have been still free, so that no special substance capable of fixing it could have been present in the cerebro-spinal fluid that was tested. On the other hand, if the red blood cells are not dissolved, then the complement must have been previously fixed by some substance in the cerebro-spinal fluid and the reaction is called a positive one.

The practical value of the test is very high. The reaction is positive with the cerebro-spinal fluid in general paralysis in 95 per cent. of the cases, and with the blood serum in 100 per cent. One would therefore refuse to make the diagnosis of general paralysis if the blood serum gave a negative Wassermann reaction. A positive reaction with the blood is, of course, not very strong positive evidence of the presence of general paralysis, for it occurs in three-quarters of simple syphilitic cases. On the other hand, a positive reaction with the cerebro-spinal fluid is strongly indicative of the presence of general paralysis, for it only rarely occurs with simple syphilis, even if this has caused serious disease of the nervous system.

The substance in the cerebro-spinal fluid that is responsible for the reaction is now known not to be a specific antibody, as Wassermann supposed, for it can fix complement in the presence not only of syphilitic material but also of many other substances. These are all, like lecithin, of a colloid nature; and it is probable that they are present to a large amount in syphilitic material. Still the fact remains that the supposed antibody is specific in the practical sense of being present only in individuals who have had syphilis, so that it is in some way produced, whether directly or indirectly, by the syphilitic infection. As was mentioned above, it is known that this substance is carried in the englobulin of the blood serum or cerebro-spinal fluid, and the further interesting discovery has been made that it is present in small quantities in normal individuals, though for special reasons it exerts no complement-binding capacity in them.

The fixation of complement that is the essential feature of the Wassermann test is performed by a reaction between this globulin antibody and colloid present in syphilitic material. The reaction has been shown to be of the nature of a precipitation, and Porges has suggested that one should be able to determine the presence of the globulin antibody by noting whether the cerebro-spinal fluid containing it causes a visible precipitate when added to a colloid emulsion. Lecithin is the colloid most often employed for this purpose, though sodium glycocholate gives rather better results. This test gives positive results in the majority of cases of general paralysis, but unfortunately it often does so also in other diseases, so that, though the theoretical interest of it is considerable, its practical value in diagnosis is but slight.

To sum up the advances in knowledge that have just been referred to, and the applications, both theoretical and practical, that may be made of them, the most striking corollary we see is the proof that the term "general paralysis," instead of being rather indefinitely applied to a vague group of allied states, as was formerly done, must now be restricted to a perfectly definite and sharply marked-off disease having both anatomical and clinical differential features of the most characteristic kind. Reflexion on the specific and highly differentiated nature of these changes at once makes it evident that in studying the etiology and pathogenesis of them we should expect to find a similarly specific cause. In the same way that discovery of the histological unity of tubercles made it practically certain that there was a specific cause at work, which was then discovered in the form of Koch's bacillus, so in general paralysis does the discovery that the disease is a specific unity that can be sharply differentiated from other diseases make it equally certain that there must be here also a specific cause at work. What that cause was had for some time been surmised as a result of the huge mass of converging evidence, drawn from the most diverse sources and following the most diverse lines of argument, that unequivocably pointed in only one direction. This surmise has within the past few years been most strikingly and gratifyingly confirmed by the study of the cerebro-spinal fluid, which showed, on the one hand, that an increase in proteid and a pronounced lymphocytosis occurred in no diseases except syphilis and the affections of tabes and general paralysis that are presumably a sequel of this, and, on the other hand, that highly peculiar substances, the so-called antibodies, are present in every case of general paralysis and in no other affection except syphilis.

The exceedingly high value that the new observations have in enabling us to make an early and certain diagnosis of the disease I have already alluded to, and in this paper, which is of a necessarily discursive character, it is impossible further to deal with the question or with that of the increased understanding of the pathological mechanisms at work that we have similarly attained. I will conclude with a remark of a more general nature—namely, that I am greatly impressed with the danger there is in tending to regard general paralysis as a paradigma of mental disease. This tendency is an extremely natural one, because it is so harmoniously in accord with the over-materialistic training we have all received in medicine in general and in psychiatry in particular. The pathological discoveries I have referred to seem so conclusively to confirm the common medical belief that mental disease is always due to some primary physical change in the brain produced by some poison circulating in the blood that those of us who, like myself, are convinced of the fundamental falsity of this belief are tempted at times to regret the making of these discoveries, magnificent as they are. At all events I feel sure that they will set back the clock in the development of scientific psychiatry more thoroughly than any other event that could have happened. This opinion is founded on the view that general paralysis, instead of being the type of the way in which mental disorder is produced, represents an exceptional way. I am not hopeful that histological and chemical methods, pursued along the route that has been opened up in such an apparently obvious way, will throw light upon many more psychiatric problems, with the exception perhaps of certain forms of acute toxic psychosis. Greatly as I admire the precise and valuable results that have been reached in the case of general paralysis, I consider that the psychological work done by, for instance, the Freud-Jung school is not only more valuable at the present moment, but is infinitely more promising of fruitful results for the future.

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[4] [illegible]

THE INTRAMUSCULAR TREATMENT OF SYPHILIS, WITH SPECIAL REFERENCE TO THE INSOLUBLE PREPARATIONS OF MERCURY: A CRITICAL REVIEW.*

BY GEORGE PERNET, M.D. PARIS, M.R.C.S. ENG., L.R.C.P. LOND.

THE protean manifestations, direct and indirect, of this infection meet the medical man at every turn, so much so that it may be said to dominate human pathology. Some writers have gone so far as to estimate that a third of the morbid conditions met with are accounted for by syphilis.[1] Notwithstanding the great advance made in recent years in the direction of prevention, syphilis is spreading, thanks to the increased intercourse of nations with one another and rapid means of communication. Wars, too, are accountable for an increase in the incidence of the disease, so much so that in South Africa, for instance, syphilis has become a danger to the community.[2] The moving about of large bodies of troops necessarily leads to the spread of venereal complaints, and I need not recall the great outbreak of syphilis at the time of the siege of Naples at the end of the fifteenth century. I have no doubt that the Cuban and Philippine campaigns have led to the spread of syphilis in the States. Again, the doubtful blessings of our civilisation can be bought too dearly by native races, such as those of Uganda, among whom lues venerea has become rife and threatens to exterminate,[3] a recent example among many of syphilis conveyed to hitherto non-contaminated communities, as in the case of Pacific islands, for instance, infected by the early navigators. Where various preventive measures have been tried, some of them most drastic, they have defeated the very ends they were intended to attain by encouraging a security that was illusory.

I have mentioned these points, not by way of an apology for dealing with a subject of perennial interest, and likely for a long time to come to partake of that character, but to show that as far as syphilis is concerned we have a Sisyphean task before us. If we turn now from generalities as to distribution and spread to the particular, the individual, we find the domain of the disease being daily extended and to include every tissue in the body. Since the days of John Hunter, who by his great authority put the clock back as to our knowledge of visceral syphilis,[4] although Morgagni had demonstrated the fact of its existence, one structure after another has succumbed to investigation. I would here insist on the enormous importance of recognising that the syphilitic infection is one that may affect any organ of the human body, and that the possibilities of future mischief are great, however benign the early visible manifestations of disease may appear to be.

It is germane to my subject to detain you yet a little longer on some cardinal points, which must, in my opinion, ever be borne in mind. We do not treat an abstract thing called syphilis, but a human organism suffering from the invasion of another organism, the *Spirochæta pallida* or *Treponema pallidum*. That this organism must be accepted as the *causa causans* is, I think, settled. Every individual case must be treated on its merits. I have dealt with this at large in another place,[5] but to prevent any misunderstanding I desire to say, *in limine*, that intramuscular injections, whether of soluble or insoluble preparations, are but one means, and a very valuable one, of treating the infection. Personally I am eclectic, and much depends on circumstances of various kinds as to the method to be employed. Intramuscular injections, especially the insoluble ones, are not to be used in a routine manner for any and every case of syphilis. It is this routine, and, I may add, careless, manner of applying an otherwise admirable method that has been responsible for such undeserved disrepute. This is a point I shall have to go into at greater length later on. Another point, which I think should be thoroughly grasped once for all, is that treatment should be started immediately the primary chancre is recognised as such, without waiting for so-called secondary or general manifestations. Indeed, all our powers should be directed towards the prevention of such symptoms by early energetic treatment guided by due and proper supervision of the case. Again, treatment should be pursued with perseverance and for a long period, for it has been amply demonstrated that inadequate treatment in the early years of the infection is fraught with future danger. It is now almost generally accepted as a fact, and further investigation serves but to confirm, that tabes[6] and general paralysis are syphilitic in origin.

Various changes in the blood-vessels[7] leading to early and serious complications, unrecognised gummata of the heart terminating with sudden death, and so on, must be mentioned here. One of the latest conquests of syphilis is the involvement of the "band of His," giving rise to what has been called "heart block" or the Stokes-Adams syndrome—viz., incoördination in the rhythmic movements of the auricles and ventricles. Rénon[14] records an instance in a syphilitic patient, who was distinctly relieved by pushing intramuscular injections of enesol.[8] That cancer may develop as a result of syphilis is undoubted, especially since the work of Fournier, Butlin, and others concerning cancer of the tongue. Gaucher goes so far as to consider this condition as being always syphilitic in origin.[9] Recent investigation again points very strongly to malignant disease of the uterus as a possible consequence of the syphilitic infection.[10]

Sufficient has been said in these brief introductory remarks to demonstrate the seriousness of the question of treatment, and is my excuse for calling your special attention to the intramuscular method. I am well aware that as far as the soluble preparations are concerned their employment is well known to you here in the United States, and it is not my intention, therefore, to detain you long as regards them. On the other hand, the insoluble preparations have not, if I may use the term, "caught on" either in my own country or in the United States—that is, as far as my knowledge goes concerning the latter, whereas in France these preparations are in current use. In England it is true, thanks to the efforts of Colonel Lambkin, mercurial cream injections are used in the British army, notwithstanding the adverse criticism of many well-known British dermatologists given in evidence before the Commission of Inquiry,[11] although apparently they had had no actual experience of the method. Judging from the discussion that took place on the subject at the Sheffield meeting of the British Medical Association (Dermatological Section) last year this attitude is maintained, for Professor Neisser of Breslau and myself were the only two speakers who were resolutely in favour of the use of the insoluble preparations.

Now this negative attitude as regards a valuable method is explained by the fact that several fatal cases have been recorded as a result of the use, or more correctly the misuse, of "grey oil." It is therefore incumbent on me to examine some of these cases critically before going any further. In 1906 Claude and Dobrovici[12] published five fatal cases following injections of grey oil. I will take them seriatim.

CASE 1.—A woman of 50 years. Injections of grey oil were given, but there are no details of this case. The patient succumbed to gangrene of the pharynx.

CASE 2.—A labourer of 25 years. Syphilis recent. He had four injections of grey oil during the month he was at the Hôpital Ricord. Was admitted to the Hôpital Saint-Louis with stomatitis. No albumin in urine. At the necropsy no evidence of pulmonary tuberculosis. Necrosis of left lower maxillary.

In this instance no details as to doses injected are given. Howbeit, the fatal issue certainly appears to have been due to the injections.

CASE 3.—A café wa[illegible] Sept. 17th, 1904, to Saint-Louis for bad [illegible] philis. Was treated for mental symptom[illegible] and epileptiform convulsions at another Paris hospital, receiving two series of six injections each with an interval of two months between them—viz.,

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* A paper read before the American Medical Association at its Sixtieth Meeting, Atlantic City, U.S.A., 1909.

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In this case we have a tuberculous patient, with kidneys no doubt much below par leading to renal inadequacy The occupation makes alcohol a possible unfavourable factor Another point is the fact that he was ordered iodide of potassium, which increased elimination of the insoluble mercury preparation stored up in the body, for the last injection of the second series of six had been administered ten days before admission to Saint Louis In mercurial stomatitis iodide of potassium is in my opinion contraindicated, but in this particular case the gumma of the anterior pillar must be borne in mind The exhibition of saline aperients is usually the best way of dealing with mercurial stomatitis, in conjunction with local treatment To sum up, this case is one in which intramuscular injections of an *insoluble* preparation were distinctly contra indicated from the first, and shows the necessity of dealing with cases on their individual merits after a thorough overhauling The upper third of the right lung showed excavations, and would of itself have been sufficient to contra indicate absolutely the employment of grey oil injections [13]

CASE 4 — A woman of 50 y
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plegia externa which it shou
treatment Treatment was
was discovered about the las
all kinds of treatment the
patient was admitted to the
June 12th There had been some albuminuria The apices of both lungs revealed *encysted tubercles* one of which was caseating Broncho pneumonia The kidneys were sclerotic with adherent capsules and atrophied cortices

In this case a more thorough examination (urine, lungs) would have prevented the use of intramuscular insoluble injections, especially in the case of an elderly female, for women do not stand the insoluble preparations as well as men, nor in such large doses

CASE 5 — A woman of 25 years syphilitic was treated in a Paris hospital in May 1906 with grey oil After an examination of the urine which did not contain albumin 10 centigrammes of metallic mercury were injected A w

Here, again, the intramuscular injections were evidently responsible, but it should be pointed out that 10 centigrammes was too large a dose to start with in a woman, and, moreover, if the mouth had been examined for signs of stomatitis as it should have been in a routine way, the second injection of 5 centigrammes would not have been given

It must be noted that these five cases were hospital patients and it is only fair, I think, to assume that their nutrition was below the average Another point of paramount importance is the condition of the teeth and mouth In Europe the teeth of hospital patients are frequently in a very bad state, in many cases the use of a tooth brush being unknown In the five cases I have rapidly summarised the teeth are not mentioned Possibly too although it is not stated, the stomatitis may have been aggravated in some of the cases, besides Case 3, by the exhibition of iodide of potassium

In addition to these five observations I would call your attention to some other bad cases which led to discussion at the Société Médicale des Hôpitaux de Paris [14] in 1906 A woman, aged 38 years, admitted on March 22nd, 1906, under Ménétrier and Bouchaud, developed a severe stomatitis of five weeks' duration five months after the injection of calomel The teeth were in a very bad condition She was discharged improved on April 1st She returned on April 12th with a fresh outbreak of the stomatitis, when a nodule in the right buttock was discovered It appeared she had had an injection on the left buttock in March, 1905 followed eight days later by an abscess which was opened, leaving a scar A second injection was made into the right buttock in October, 1905, leaving a nodule or infiltration, which was excised. The urine did not reveal any albumin, but mercury was found in it In this case the injection had been made in the subcutaneous fat and not into the actual muscle as it should have been *This is an important point*, and it is necessary in fat patients that a needle of sufficient length should be used to ensure reaching the muscle

In another fatal case, recorded by Letulle,[15] a woman, aged 26 years had had 20 injections of grey oil extending over four months, the patient being pregnant at the time All went well at the confinement and a full term child was delivered On March 24th, the day before her admission to hospital, another injection of grey oil was made, making 21 injections in all A few hours later acute stomatitis occurred The doses of the grey oil injected were unknown, as usual Her teeth were in a deplorable condition, they were never attended to in any way during her confinement Several decayed teeth were removed, with some improvement But the stomatitis returned and the patient died At the necropsy slight nephritis of some standing was found Here we have to deal with an unjustifiable use of an insoluble preparation —viz , 20 injections in four months in a pregnant woman It is well known that mercurial stomatitis is very likely to occur in pregnancy and the puerperium when the woman is in a toxic condition already [16] Pregnancy contra indicated the insoluble injections Moreover, women are in any case more prone to develop stomatitis than are men [17] The doses injected were not known, a fact which crops up frequently in the records of fatal cases In addition, the patient's teeth were evidently in a condition that should have been an additional contra indication to the employment of insoluble injections

In the discussion Queyrat, who had had a large experience *at Cochin Ricord, said he had never seen any serious* symptoms following the use of intramuscular injections of grey oil, even in larger doses than was usual, although 6000 and more a year were carried out in his department He pointed out that in some individuals nodules occurred, and in such it was wise not to persevere with insoluble preparations if nodules followed the injections on two consecutive occasions In this I agree, for it must be remembered that in cases of that kind a large amount of mercury may subsequently be suddenly thrown into the system In some cases deposits of mercury have been revealed by X rays [18] and excised, thus cutting short the stomatitic symptoms

Duhot, who for some years now has employed the insoluble preparation of mercury on a large scale and followed up his cases in a very thorough manner, has published his results in a recent paper [19] As regards "grey oil,' during the three years 1906-7-8 he has dealt with 781 cases of syphilis (primary, early and late congenital) in hospital and private practice (some 7800 intramuscular injections) and including cases previous to 1906 has had an experience of over 20,000 injections in all Taking the year 1908 (289 cases in hospital and in private 253—141 hospital and 121 private of which were treated by means of injections of grey oil, about 4500 injections) he never met with any serious complication as a result of the intramuscular treatment ("*huile grise*') The doses varied from 7 to 14 centigrammes In neither class of practice was there any case of stomatitis In three hospital cases a superficial abscess was observed due to a fissure in the needle Here I may observe that needles (platino iridium) require supervision as to cracks, thus leading to a deposit of the grey oil in the superficial parts 15 nodules (10 hospital, 5 private) occurred By nodule is meant a nodular infiltration or small lump in the muscle Slight gingivitis 6 (4 hospital and 2 private) Thoracic pain or constriction 9 (6 hospital and 3 private), Mercurial grippe, "*grippe mercurielle*' "*fièvre mercurielle*' of Emery, that is general malaise, slight febrile manifestations, pains about the limbs and joints, loss of appetite,
headache, &c , in a
grippe [20] Albuminur
cases Intolerance
were observed in women, this emphasises what I have already said as to women not standing the injections as well as men

Jullien [21] was the first to contend that the early (*secondary*) manifestations of syphilis could be systematically prevented by energetic treatment—viz , by intramuscular injections of calomel Duhot held the same opinion for a time but subsequently he gave up calomel for grey oil, and he now puts forward 200 cases he has had under observation, and claims that as a result of energetic "abortive" treatment, as he calls it, by intramuscular injections of grey oil in large doses started immediately on the early diagnosis of primary chancre, there has been no sign of tertiary manifestations.[22] Of course, as we all know, the tertiary symptoms may be long delayed, and this is a fair objection that might be made as to the point he has put forward. As to doubt about the diagnosis of the primary syphilis, he has laid this at rest by a systematic examination for the Treponema *pallidum* by demonstrating its presence in smears and frequently in the excised chancre, this being ascertained in a routine way before starting the treatment. When the treatment was commenced after the appearance of the secondary or early rash, tertiary manifestations have occurred but they have been rare, thus emphasising the necessity of early interference. I have already insisted on the importance of such a procedure, but it will bear repeating again and again, so great is the influence of authority, especially as it is still maintained in some quarters that one should wait for the secondary rash before commencing treatment, although that attitude is slowly breaking down and giving way to a more rational view of the matter. Moreover, Duhot further insists that in his cases (134 at the time he wrote on the point) cerebro-spinal lymphocytosis as ascertained by lumbar puncture did not occur. In addition to this, Duhot, with the assistance of De Grave, is applying the Wassermann test to cases treated by the abortive method. They have found that the negative Wassermann test is in direct ratio to energetic early intensive treatment.

Scherber, in the clinic of Finger at Vienna, has also obtained encouraging results with the "*abortive*" treatment by excision of the primary sore and intramuscular injections of either mercury salicylate or "*huile grise*," but mainly the former.[23]

Neisser has also employed large doses of grey oil, following on Duhot's initiative, that is, 14 centigrammes. In a recent communication Zieler (now of Würzburg), working in Neisser's Breslau clinic, places on record that injections of large doses of grey oil are well borne, and states that in 50 cases treated in that way, totalling 271 injections of 14 centigrammes, no untoward complication was observed, and that even in the case of women such large doses could be frequently employed, but that in them marked infiltrations (nodules) were observed in several instances.[24] Zieler insists, however, on the importance of using the new preparations of grey oil in this respect, and points out, as I have already done, that women do not bear the injections as well as men, and that it is incumbent in their case to use smaller doses—viz., 5 to 7 centigrammes.

Another recent paper on the subject by Carle must also be alluded to. In 282 cases (1902 to 1907) Carle employed the abortive treatment early and "intense," with very satisfactory results as to secondary and tertiary symptoms,[25] and on the whole he confirms the results of Jullien, Duhot, Leredde, Tommasoli, and others; but Carle does not consider that abortive, intense, early treatment prevents in all cases subsequent morbid manifestations. He also expresses the opinion that in rare instances the iodides and arsenic are valuable, especially in the malignant forms.

It would be impossible in the present paper to go into all the literature of this big subject, but I think I have said enough to show that when the intramuscular injections of grey oil are carried out with care and with the precautions that I shall enumerate further on, serious complications do not arise. In the foregoing it has been my endeavour to deal with the matter fairly and squarely, for we must aim as medical men at doing all we can for the benefit of our patients. I have placed before you the dangerous possibilities that lurk in the treatment unless carefully applied, and I should certainly not advise any and everybody to attempt it unless the method has been mastered. I repeat once more that it is *not* a routine treatment which can be carried out in a haphazard manner.

As far as my own work goes, I may say that I have only employed the intramuscular injections of insoluble preparations in my private practice. I have never seen any complication arise. My results have been very satisfactory and I consider the method a most valuable one, especially when any serious syphilitic complication threatens. My experience of the *early abortive intense* treatment has been from the nature of private practice very limited, and I have not felt justified in applying it to its full extent. But where full control of the patient could be obtained I have found no ill-effects ensue after 10 or 12 consecutive weekly injections of doses varying from 7 to 10 centigrammes. Indeed, the results have been in a few instances of this kind very encouraging. In one case the primary sore was followed by high temperature in a patient who had previously suffered from malaria, and who, as is usual in such an event, considered the febrile condition of that nature. I considered the temperature was syphilitic, and on that assumption I injected grey oil, as I have stated, with the best of results. Since then several series of injections of grey oil have been given, and the patient has done extremely well as far as syphilitic symptoms are concerned. The injections have been well borne, although the patient had been liable to pseudo-dysenteric attacks. Salicylate of bismuth in gr. v. cachets three times a day is efficient as a rule in dealing with any tendency to attacks of diarrhœa.

Before leaving grey oil it is necessary to state that a properly made sterilised standard preparation should be used. As far as I am concerned, I have always employed French preparations and I have found them reliable in their action. Grey oil is now in the French Official Pharmacopœia. The formula is: purified mercury, 40 grammes; anhydrous lanolin, pure and sterilised, 26 grammes; medicinal oil of vaseline sterilised, 60 cubic centimetres. This is put up in small glass-stoppered bottles of 1 cubic centimetre of the preparation containing practically 40 centigrammes of mercury. I now use Lafay's standard preparation, but there are other good brands such as Vigier's, Roger-Cavailles's, &c. I am obliged to mention this, as it is of the greatest importance, as you will see, to use a uniform grey oil, for some of the accidents which have been placed on record have been the result of using much too large doses in error, and in one case of employing a preparation put up by a pharmacist who made a mistake in reading the prescription (Smirnoff's case) By employing a standard preparation of one strength and a syringe one is accustomed to, there is no chance of confusion and of errors, which may arise when different strengths and variously graduated syringes are used.

Accidents with grey oil, and also with calomel, have occurred—that is undoubted, and I insist on the fact. But accidents have also followed the use of soluble preparations and fatal cases have resulted from inunctions. With regard to the latter I will mention two cases. In the case of a very fat woman, G. Mayer[26] of Aachen records a fatal termination following the use of inunctions, which led to a severe generalised eczema, as he calls it, but which was probably what we should more correctly designate mercurial dermatitis. Stein[27] has quite recently given the details of a fatal case occurring in a young woman of 26 years, with recent syphilis, who developed severe dermatitis after 24 rubbings of 3 grammes each of unguentum hydrargyri, from Nov. 18th to Dec. 17th, accompanied by fever and very severe complications. The patient died seven weeks after the commencement of the treatment. At the necropsy, numerous punctiform hæmorrhages were found in the muscles of the trunk, in the endocardium, the liver, the kidneys, and the intestinal mucous membranes. It will be noted that once more the patient was a woman, a point to be borne in mind. There is no doubt the rubbing was over-done. Moreover, when the erythema started, iodide of potassium was administered, a proceeding which I consider a mistaken one—a fact I have already insisted on. These are not the only two cases that might be brought forward against the inunction treatment. But that would surely be no reason for damning a method that is valuable. Philosophically considered, everything is relative, just as much in medicine as in any other sphere of human activity and endeavour.

In my own experience I have found that patients suffering from the effects of fairly recent malarial and tropical infections, such as blackwater fever, bear inunctions badly. In one instance, two or three inunctions led to severe stomatitis, although the mouth had been put in order, and the patient was confined to his bed and kept under strict observation. *A fortiori* in such cases would intramuscular injections of insoluble preparations be contra-indicated, and soluble preparations would have to be closely watched. In the particular case I have referred to I found arsenic very valuable. That was before atoxyl, but they are the sort of patients in whom a properly prepared atoxyl should prove useful.

In connexion with my subject, I must allude to an instructive and unusual case of indirect mercurial intoxication terminating fatally and occurring in a tuberculous male of 21 years related by Volk. The patient was admitted to a venereal ward in Vienna on account of an ulceration which had been thought to be luetic but was really tuberculous. The cubic capacity of the ward was about 750 cubic metres and contained 24 patients. Five or six of these were being treated by means of Welander's mercury bags, whilst others at the time were not having inunctions or other external mercurial treatment. Nine days later the tuberculous patient developed mercurial stomatitis, and notwithstanding the fact that he was moved to another ward he rapidly sank with symptoms of lobular pneumonia and œdema of the lungs, the stomatitis having meanwhile become worse and worse.[28] Here we have a rare example of indirect mercurial intoxication, but it must be observed occurring in a tuberculous non-syphilitic patient.

This case reminds me of an instance of bad stomatitis in a male with old syphilis following inunctions. The stomatitis made no headway towards recovery when the inunctions were stopped and the condition treated by appropriate remedies, but I discovered that the patient was still wearing the singlet he had worn during the inunction period and which was still soiled with unguentum hydrargyri. He was inhaling mercurial vapours, especially at night. When this was removed his stomatitis soon improved. If I have referred to toxic complications arising from other methods, it has not been with the intention of condemning them, but in order to show that no method was perfect, and that intramuscular injections of insoluble preparations especially were not to be thrown on one side because accidents, in most if not all instances avoidable, had followed their use.

I take this opportunity of calling your attention to another point of importance—viz., that complications laid at the door of mercurial treatment are not infrequently really due to the syphilitic infection itself. This is a subject I cannot deal with in this place at any length, but symptoms of that kind, such as fever, albuminuria, and so forth, will readily occur to you. Moreover, this side of the question has already been thoroughly dealt with by Emery and Lacapere [29] and others, so I will pass on to the consideration of matters more nearly related to my present paper.

Having touched on grey oil, I must now say a few words on the subject of calomel, first employed subcutaneously and then intramuscularly by Scarenzio in 1864.[30] Jullien, who had experimented with a variety of mercurial preparations, soluble and insoluble, came to the conclusion that calomel in intramuscular injections was a sovereign remedy and one which, when used carefully, could be employed with safety. He instances, for example, two cases of early optic neuritis which cleared up under its use.[31] In serious manifestations of syphilis, of the brain, eye, and so forth, calomel is a sheet anchor. Leredde, Babinski, and other observers have shown its value in syphilitic affections of the nerves. Darier, in speaking of threatening specific cerebral arteritis, is very categoric on the point, and rightly so. He advises the immediate injection of 10 centigrammes of calomel in the case of men, and 5 to 7 centigrammes in the case of women, continuing them every fifth or eighth day, but when the mouth is in bad condition a daily injection of a soluble preparation (biniodide, benzoate, cyanide) is to be preferred.[32]

In the initial manifestations of early syphilitic hemiplegia the use of calomel may make all the difference in the future of a young man. I have myself seen a promising career wrecked by not keeping this point well in view. The patient was a young adult from abroad, whom I saw for the first time a year after the hemiplegia had become confirmed. In the quite early stages of his cerebral syphilis he had been treated in London by mercurial pills, an utterly inadequate treatment. When he came under my observation for the first time, a year later as I say, there was nothing to be done, the arm having become ankylosed at the shoulder-joint, with contractures. This case made a great impression on me. Now had this young man been injected with calomel from the very onset there is every probability the hemiplegia would have been averted. And it is all very well to say that the insoluble preparations may lead to complications in the way of mercurial intoxication, but in desperate junctures the consequences of the syphilitic infection, as in this case, may be more damaging still.

One of the objections made to calomel is that the injections are very painful. They may be, although patients vary a great deal in this respect. I have not found Zambeletti's calomel preparation lead to any pain, or at most it has been slight or very bearable. Recent experimentations by Lévy-Bing, Eudlitz, and Lafay tend to show that concentrated calomel preparations are better borne than those usually employed. They have settled on a preparation containing 40 centigrammes to 1 cubic centimetre, instead of using those in the market containing only 5 or 10 centigrammes to 1 cubic centimetre.[33] This dosage has the further advantage of assimilating it to the "*huile grise*" of the French codex, thus leading to simplification in practice.

There is a syphilitic symptom which is of great importance and not infrequently overlooked, I mean the characteristic headache coming on towards the evening (vesperal), or occurring at night (nocturnal), and which calls for energetic and immediate treatment by means of intramuscular injections of insoluble or soluble preparations, as the case may be. In dealing with the insoluble preparations, and especially "grey oil," I have referred mainly to French medical literature, for the simple reason that it is in France that they have been mainly employed. In England and the United States this method of treatment has not been applied to any extent, but only made use of sporadically.

Although I have subtitled my paper a critical review, one of its objects is of the nature of a plea in favour of valuable preparations likely to prove of the very greatest service in combating so fell and protean an infection as syphilis, and in preventing some of its direst consequences, disastrous alike to the individual and the community. I make no apology, therefore, for bringing the matter before you, and I am sure that with your active American minds, so quick to seize on the practical aspects of life, you will have grasped the force of the evidence which I have placed before you. I have done this in a fair and impartial manner, being fully alive to the responsibility which such a presentation entails. This fact makes it necessary that I should detain you yet a little longer in order to touch on the technique of the insoluble injections.

In dealing with this part of my subject to save time I will give the details of the manner in which I myself carry out the intramuscular injections, but in the bibliography which I have appended references will be found by those wishful of going more thoroughly into the matter; indeed, it is very desirable that anyone contemplating the employment of the method should make a point of doing so.[34] For the insoluble preparations the Edmond Fournier and the Lévy-Bing-Lafay syringes should be used and not an ordinary Pravaz, as usually recommended. The Fournier model is all glass and of ½ cubic centimetre capacity, divided into ten on the barrel, so that each division represents 2 centigrammes of mercury or of calomel, the standard preparations being, as I have said, 40 centigrammes of mercury to 1 cubic centimetre (*huile grise*) and 40 centigrammes to 1 cubic centimetre (concentrated calomel preparations) respectively.

The Lévy-Bing-Lafay syringe has been specially devised for the 40 centigrammes to 1 cubic centimetre preparations. It is all glass and nickel with bayonet adjustment for the cap, making the parts readily detachable. In this syringe the piston rod itself is graduated, being divided into 15, each division representing 1 centigramme of the 40 centigrammes to 1 cubic centimetre preparation (*huile grise* and calomel), thus rendering the instrument very practical. Fifteen centigrammes is the maximum dose that may in certain very special cases be employed without producing toxic effects, but I would warn you that it is advisable to be satisfied as a rule with doses not exceeding 10 centigrammes for men and 5 to 7 centigrammes for women.

As to the Zambeletti preparations of calomel they are put up in phials containing 5 to 10 centigrammes of calomel, so that any good ordinary glass syringe can be used. The syringes are sterilised by boiling in the usual way. As to needles, they are of iridized platinum with gold mounts, and can be passed through a flame before fitting to the charge syringe, but I prefer to boil them at the same time as the syringe. Their length is an important matter in the case of the insoluble preparations with which I am at present concerned—viz., not less than 5 centimetres. But needles of various lengths are required: 6, 7, 8 centimetres for fat subjects, in order to get the preparation well into the muscle. The bevelled end must be kept sharp to avoid giving pain. This is effected by means of small pieces of Arkansas stone. The lumen must be sufficient, but not too large. The needles can be kept in paraffinum liquidum or in alcohol. Before using them their permeability must be ascertained.

With regard to the parts of the buttocks where the injections are to be made I have come to the conclusion that an area round a point midway between the gluteal cleft and the anterior superior iliac spine is the most useful. Lévy-Bing[35] has gone into the matter by means of actual dissections and gives the following directions. Through the middle of a line joining the gluteal cleft and the anterior superior iliac spine he drops a perpendicular, and describes a circle with its centre at the point of intersection and with a radius of three centimetres. In each of the quadrants thus formed he makes an injection. There are also other suitable positions,[36] but the point is, to keep to the upper parts of the buttocks well away from the danger zone of vessels and nerves, which can be readily ascertained by a reference to anatomical plates[37] or to bodies in the dissecting room.

The following is the *modus operandi*. The injections should be made with the patient lying on a couch in the prone position. The part of the buttock selected must be thoroughly sterilised (soap, ethereal soap, alcohol, ether, and so forth). The sterilised needle is then attached to the nozzle of the empty sterilised syringe and plunged perpendicularly and rapidly through the skin into the subjacent muscle. The piston is gently drawn up two or three times in the barrel in order to make sure that the point of the needle has not penetrated a vessel. If any blood appear the needle may be either withdrawn a little and the test repeated or withdrawn altogether and another spot selected. It is, I need scarcely add, important *not* to inject an oily preparation into the lumen of a vessel. Personally, I have never drawn blood up in the syringe on applying this preliminary test, but nevertheless I always make the trial as a matter of routine. The barrel is then detached from the needle, which is left in place. The "*huile grise*" or calomel is then drawn up into the barrel directly from the *flacon*, an easy matter with Edmond Fournier's small calibre syringe. Here it is necessary to point out that the mercurial preparations should be slightly warmed, not heated, and well shaken up before charging the barrel. The dose required, 5, 6, or more centigrammes, as the case may be, is then drawn up into the barrel, which is re-attached to the needle, and if no blood has appeared at the mount of the needle the dose is slowly but firmly pushed home in the muscle. Duhot recommended that after this has been done some air or a little sterilised saline solution should be drawn up into the barrel, detached for a second time for that purpose, and in its turn pushed home in order to clear the needle of any preparation remaining on it, and thus avoid leaving a track of grey oil when the needle is withdrawn. Tracks of this kind may lead to small superficial furuncles. I have always used air and I have never seen any untoward result ensue. There is no need to massage the part, as is sometimes recommended. The orifice is covered with a small piece of zinc oxide plaster or collodion and wool. A careful record should be kept of the quantity injected at each sitting and the point injected. In the case of these insoluble preparations one injection a week is the rule. The injections should be made in the right and left buttock alternately. In every case, and especially when the insoluble preparations are employed, the patient should be previously thoroughly overhauled as regards the state of his mouth, the condition of the urine as to albumin, &c., his weight estimated, and so forth. I have already insisted on the condition of the teeth, any defect being put right by a dental surgeon before starting the treatment. This is an essential point, and may mean everything as regarded the future course of the treatment. During treatment the urine must be watched, as also the state of the gums and buccal mucous membranes, by examination with the frontal mirror and reflected light, in order that any warning may bid you to stop the injections.

Again, I would insist that all methods have their advantages and disadvantages. In selection one must be eclectic and it is of the greatest importance not to go off one's head in favour of any one method to the exclusion of all others. Every case must be dealt with on its merits and the various circumstances surrounding it taken into account. Injections of insoluble preparations must not be employed in a routine manner for all and sundry. In some cases they are absolutely contra-indicated, as in old people, the broken-down, the bed-ridden, paraplegic, and those with renal inadequacy or presenting albuminuria, patients suffering from tuberculosis, lead-poisoning, or decidedly gouty, and alcoholics. I have already called attention to the unsuitability of cases suffering from the devitalising effects of malaria and tropical fevers, as also of pregnant women. One must be specially careful in the case of women.

On a variety of other points I would refer you for full details to the quite recent contributions of Emery and Chatin, whose exhaustive and thorough work will well repay study, and of Lévy-Bing, who has written a succinct monograph on the subject.[31] Although I have dealt mainly with the insoluble preparations of mercury, for reasons stated, I have no desire to minimise the value of the soluble salts. The latter are often of the greatest utility, and I would here testify to the good results I have obtained with the hypertonic benzoate of mercury as prepared in accordance with the directions of Professor Gaucher. There are also a number of mercurial solutions, which all have their place and with which you are familiar.

In conclusion, I desire to thank you, Mr. President and gentlemen, for the opportunity you have given me of submitting the foregoing remarks to your judgment and for the honour you have done me in inviting me to take part in the work of your great Medical Association.

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Harley street, W

N INVESTIGATION INTO THE ACTION AND USES OF FIBROLYSIN IN MIDDLE-EAR DEAFNESS

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GRAY'S INN ROAD W C

N 1892 von Hebra[1] published the results he had obtained h a 15 per cent solution of thiosinamine in alcohol in treatment of lupus and cutaneous scars He used this ution by the injection method and showed that it had a y [illegible] logical fibro cicatricial sue [illegible] which is chemically ow [illegible] prepared from oil of istard and occurs in colourless monoclinic or rhombic stals with a bitter taste and an odour of garlic It is an stable compound, insoluble in water, but dissolving freely alcohol The physiological action of thiosinamine is, in first place, to cause a diminution of the number of leuco tes in the blood, followed later by a very considerable rease Its action on scar tissue is very definite Macro-opically, after an injection a reddish scar, such as that er a burn, becomes paler, swollen, and more flexible, and limited movements of the parts bound down by the scar sue are increased in range, but after a short time these enomena disappear If, however, the injections are peated at short intervals it is found that the above ntioned conditions become permanent Microscopically, rgescence is seen to take place in the individual connective sue fibres, their outline becomes blurred and indistinct e nuclei are pushed aside and appear more prominent, and e whole tissue becomes swollen and looser in texture A rious feature of thiosinamine is that its action is only erted on pathological fibrous tissue The objections to its e are its instability, its insolubility, and the extreme itation caused by the injection of its alcoholic solution lix Mendel[2] of Essen, however, discovered that by the mbination of two molecules of thiosinamine with one of licylate of soda a substance was produced which was easily luble in water, was comparatively stable, and did not give e to any irritation on the injection of its aqueous solution this substance—which retained all the properties of iosinamine—was given the name of "fibrolysin"

I first saw the beneficial results obtained by its use some ree years ago in two cases The first was one of upuytren's contraction of the fingers, in which a fair, ough not very good, result was obtained The injections ere given about once a fortnight, the fingers were frequently oved, and the hand was placed on a straight splint in the tervals, the result would in all probability have been much etter had the injections been given twice a week instead of ice a fortnight The second was a case of Volkmann's con acture (the so called ischaemic paralysis), in which a very ccellent result was obtained after frequent injections hese results led me to think that fibrolysin might prove a ery valuable therapeutic agent in the treatment of aural ases, and particularly in those where, as a result of suppura on or catarrh, a development of fibro cicatricial tissue had ken place in any portion of the conducting apparatus of e ear

In my first series of cases the results were not generally tisfactory, some cases certainly showed fair improvement, ut the greater majority were in no way benefited At is time I had been giving the injections once a fortnight, nd I determined to increase them to twice a week and at e same time to apply it locally to the middle ear through n Eustachian catheter—a method employed with success by André Horeau in connexion with thiosinamine The results immediately improved The method which I employ is to use one ampulla of fibrolysin containing 2 3 cubic centimetres—roughly 40 minims—as follows 30 minims are injected subcutaneously into the upper arm, and 5 minims are insufflated through an Eustachian catheter into each middle ear After an interval of 15 minutes massage is applied on each side for from three to five minutes by means of an oto masseur This routine is gone through twice a week for six weeks, if at the end of that time there is no definite improvement my experience is that the case is a hopeless one, and that it is useless to persevere with the treatment

The cases in which I have systematically carried out this treatment are those of deafness and tinnitus resulting from (1) post suppurative middle ear catarrh, where there has been a cessation of discharge with formation of scar tissue and destruction or ankylosis of the ossicles, and (2) chronic dry middle ear catarrh—i e, non suppurative catarrh—retracted membranes, with or without ankylosis of the ossicles

The number of cases that have had the six weeks' treatment have been 68 Of these, 21 were cases of post-suppurative middle ear catarrh and 47 were cases of chronic dry middle ear catarrh Of the 21 cases of post suppurative middle ear catarrh, 16 had tinnitus and five had no tinnitus. Of the 16 with tinnitus, four were complete failures, there was no improvement in hearing or diminution in the noises —indeed, one patient stated that she was much worse in both respects Six had no improvement in hearing, but stated that the noises were less, two of these stated that the noises had completely ceased, and they thought they could hear a little better (this, however, was not borne out by the tests) Six showed good improvement in hearing to the tests, and stated that the noises were diminished in three, completely ceased in two, and no better in one Of the five cases with deafness but with no tinnitus, two showed no improvement and three showed improvement Of the 47 cases of dry middle ear catarrh, 36 had tinnitus and 11 had no tinnitus Of the 36 with tinnitus, 11 were complete failures, eight showed no improvement in hearing to the tests, but stated the noises to be diminished (completely ceased in two), and 17 showed improvement in hearing to the tests, and of these, six stated that there was no diminution in the noises (though in one they had become intermittent instead of being constant), eight stated the noises to be diminished, and three reported the noises to have quite ceased Of the 11 without tinnitus, seven showed improvement to the tests and four showed no improvement

In order to prove that it was the fibrolysin and not the Eustachian catheter and the oto masseur which brought about the improvement, 15 of the above cases—all with tinnitus as well as deafness—were first treated by the catheter and massage for six weeks without having any fibrolysin, and their tests taken, they were then put on the fibrolysin course, and at the end of the six weeks of fibrolysin treatment their tests were again taken and the three sets of tests were compared It was found that in seven out of the 15 there was no improvement in hearing, though two out of these seven reported diminution in the tinnitus The accompanying table shows the improvement in the eight cases which received benefit—three of post suppurative middle ear catarrh and five of chronic dry middle ear catarrh

It will be seen that in Cases 1 and 5 there was a slight improvement in both ears after the six weeks' catheterisation and oto massage, but a very much greater improvement took place under fibrolysin It will also be noticed that the post-suppurative cases gave more consistently good results—i e, greater improvement—than did the chronic dry catarrhs, moreover, in all the above, with two exceptions, the tinnitus was improved and in one it had quite ceased

I turn next to the question of the permanency of the results obtained Of the 16 cases showing improvement in hearing and diminution in tinnitus, ten were treated a year ago or over and have had no treatment since, four were cases of post suppurative middle ear catarrh Of these one only has had a relapse in both hearing and tinnitus, in two the improvement in hearing is maintained, but the noises slightly returned, and in one the improvement in hearing is maintained and there has been no return of the tinnitus Six were [illegible] Of these two have relapsed [illegible] other has [illegible] nution in

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[1] Von Hebra: Intern Klinische Rundschau Sept 11th 1892.

[2] Felix Mendel Therapeutische Monatshefte February and April 905, and Therapie der Gegenwart August, 1905

Table giving the Results of Eight Cases after Treatment.

Number of case and nature of disease.	Tests applied and results.		Results after six weeks' treatment with Eustachian catheter and otomasseur.	Results after six weeks' treatment with fibrolysin.
Case 1. Double non-suppurative dry middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -16 L. -15	- 11 - 14	- 4 - 6
	T. F. C^{1} 256 Mastoid	R. + 7 L. +10	+ 7 + 9	+ 3 + 4
	T. F. C^{1} 256 Rinné	R. - 7 L -10	- 8 - 9	- 3 - 5
	Watch	R., 6 in. L., 4 ,,	6½ in. 4½ ,,	9 in. 7 ,,
	Whisper	R., 3 ft. L., 2 ,,	3½ ft. 2½ ,,	5 ft. 4 ,,
	Tinnitus.—A loud constant "buzzing" in both ears.		Slightly diminished in both ears.	Noises now intermittent and much diminished in intensity in both ears.
Case 2. Double post-suppurative middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -16 L. -19	- 16 - 20	- 9 - 10
	T. F. C^{1} 256 Mastoid	R. +10 L. +12	+ 11 + 12	+ 4 + 6
	T. F. C^{1} 256 Rinné	R. -11 L. -12	- 10 - 12	- 8 - 8
	Watch	R., 2½ in. L, 2 ,,	2½ in. 1½ ,,	5½ in. 5 ,,
	Whisper	R., 1 ft. L., 8 in.	1 ft. 6 in.	3 ft. 2 ,,
	Tinnitus.—Constant "ringing" in both ears.		No improvement.	Much diminished.
Case 3. Double non-suppurative dry middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -20 L -14	- 20 - 12	- 10 - 8
	T. F. C^{1} 256 Mastoid	R. +10 L. + 8	+ 8 + 8	+ 4 + 6
	T. F. C^{1} 256 Rinné	R. -11 L. - 6	- 10 - 6	- 6 - 5
	Watch	R., 2 in. L., 3 ,,	2 in. 3½ ,,	6 in. 4 ,,
	Whisper	R., 1½ ft. L., 2½ ,,	2 ft. 2 ,,	4 ft. 3 ,,
	Tinnitus.—Constant "buzzing" in both ears.		No improvement.	"Thinks noises are much better."
Case 4. Double post-suppurative middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -14 L. -10	- 15 - 8	- 8 - 5
	T. F. C^{1} 256 Mastoid	R. +10 L. + 6	+ 11 + 5	+ 3 + 2
	T. F. C^{1} 256 Rinné	R. - 8 L. - 5	- 9 - 5	- 4 - 2
	Watch	R., 4½ in. L., 6 ,,	4 in. 7 ,,	10½ in. 24 ,,
	Whisper	R., 3 ft. L., 4 ,,	3 ft. 5 ,,	6 ft. 10 ,,
	Tinnitus.—Constant loud "hissing" in both ears.		Slightly diminished.	States that he very rarely has any noises now.
Case 5. Double post-suppurative middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -26 L. -16	- 24 - 15	- 8 - 6
	T. F. C^{1} 256 Mastoid	R. +14 L. +12	+ 14 + 11	+ 6 + 4
	T. F. C^{1} 256 Rinné	R. -14 L. - 8	- 13 - 8	- 7 - 4
	Watch	R., 2 in. L., 3 ,,	2 in. 3½ ,,	12½ in. 18 ,,
	Whisper	R., 1 ft. L, 2 ,,	16 ,, 2½ ft.	3 ft. 5 ,,
	Tinnitus.—Constant "roaring" in both ears.		Slightly diminished.	Noises markedly diminished and intermittent in left ear. Much diminished but constant in right ear.
Case 6. Double non-suppurative middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -20 L. -34	- 20 - 31	- 8 - 16
	T. F. C^{1} 256 Mastoid	R. +14 L. +18	+ 12 + 16	+ 6 + 12
	T. F. C^{1} 256 Rinné	R. -12 L. -17	- 12 - 16	- 5 - 9
	Watch	R., 1 in. L, 0	1½ in. 0	10 in. 2 ,,
	Whisper	R., 1 ft. L., 8 in.	1 ft. 10 in.	4 ft. 1½ ,,
	Tinnitus.—Loud, constant "buzzing" in both ears.		Same.	States noises a[illegible] not so loud as formerly.
Case 7. Double non-suppurative middle-ear catarrh.	*T. F.* C^{1} 256 Meatus	R. -25 L. -28	- 26 - 24	- 14 - 12
	T. F. C^{1} 256 Mastoid	R. +14 L. +16	+ 14 + 15	+ 10 + 8
	T. F. C^{1} 256 Rinné	R. -10 L. -12	- 10 - 11	- 8 - 7
	Watch	R., C. L., C.	C. ½ in.	2 in. 4½ ,,
	Whisper	R., 1½ ft. L., 1 ,,	2 ft. 1½ ,,	2½ ft. 3 ,,
	Tinnitus.—Loud, constant "ringing" in both ears.		Same.	No improvement.
Case 8. Double non-suppurative middle-ear catarrh.	*T. F.* C_1. Meatus	R. -10 L. -18	- 10 - 19	- 8 - 10
	T. F. C_1. Mastoid	R. + 6 L. +12	+ 6 + 13	+ 4 + 6
	T. F. C_1. Rinné	R. - 7 L. -11.	- 7 - 12	- 5 - 7
	Watch	R., 2 in. L., ½ ,,	2½ in. ½ ,,	4 in. 3 ,,
	Whisper	R., 2 ft. L., 14 in.	2½ ft. 1 ,,	4 ft. 2 ,,
	Tinnitus.—Constant loud "buzzing" in both ears, especially marked in left ear.		Same.	No improvement.

T. F. = tuning-fork. C. = contact. R. = right. L. = left.

the hearing power); four have retained their improvement in hearing, but in two of these there has been in one in whom the noises had quite disappeared an occasional return of the tinnitus, and in the other in whom the noises had considerably diminished there has been a slight increase. Two have retained their improvement in both respects.

Conclusions.—To epitomise briefly the results obtained it will be seen that of the 52 cases of deafness *plus* tinnitus the hearing improved and noises diminished in 16 (noises quite ceased in five of these); hearing improved, but noises not diminished in seven; noises diminished, but no improvement in hearing in 14 (in four of these the noises have quite ceased), and no improvement in hearing and no diminution of noises in 15. In the 16 cases of deafness without tinnitus, ten showed improvement to the various tests.

From the results obtained it would appear that this method of treatment was more successful in the non-suppurative than in the post-suppurative cases; but whilst this was so in regard to the percentage of cases showing improvement in hearing and diminution in tinnitus, yet when taken from the point of view of the amount of improvement produced the post-suppurative cases gave far better results; and I arrived at the conclusion that the fibrolysin treatment is by far the best treatment in this class of case—the earlier the case is treated after cessation of the discharge and formation of the scar tissue the better the prognosis. I think that from the results obtained it will be seen that in cases of non-suppurative middle-ear catarrh this method of treatment gives much better chances of improvement than any other. I must, however, make an exception in the atrophic variety of non-suppurative middle-ear catarrh—the variety in which one finds, on examination with a Siegle's speculum, a very thinned tympanic membrane with an abnormal amount of movement, with marked outward bulging on the application of suction. In this type of case fibrolysin proved quite useless. In true oto-sclerosis the results obtained with fibrolysin were very poor; only two out of 15 showed any improvement, and that very slight.

In only one of my cases were there any bad symptoms produced by the injections. This was a case of a young woman, aged 25 years, with double non-suppurative middle-ear catarrh of two years' duration. She was put on the fibrolysin course, but this had to be stopped owing to her developing marked vertigo after each injection. A number of other cases in which bad symptoms have followed the injections have been reported from time to time,[3] but the above was the only one in my personal experience.

I must, in conclusion, express my thanks to my late clinical assistant at the Great Northern Central Hospital, Dr. Edgar Brown, for having very carefully taken the various tests and kept the records of the cases.

Harley-street, W.

THE FATE OF DAMAGED JOINTS:

A STUDY OF CASES OF INJURY, PRINCIPALLY FRACTURES, INVOLVING JOINTS TREATED IN THE MASSAGE DEPARTMENT OF THE LONDON HOSPITAL.

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(*Concluded from p. 141.*)

The Wrist.

THE most striking feature of this series is the enormous predominance of Colles's fracture; 103 cases out of 110 were of this nature. Taking the remaining seven cases first, these consisted of two cases of sprained wrist, which did well in from two to three weeks (the patients were seen a year or more afterwards); two cases of fracture of the styloid process of the radius, both of which did well in from six to eight weeks. One case of splitting off of a flake of the lower part of the radius, including the lower radio-ulnar articulating surface (this case showed a very fair result a year later); one case of fracture of the styloid process of the ulnar alone (not traced); and one case of fracture of the scaphoid and probably also of the trapezium and trapezoid (this patient attended for five weeks and did not show satisfactory progress when last seen).

Colles's fracture.—Of this group 91 were recent cases of fracture, and 12 were cases of some standing before massage and exercises were commenced. In judging the results the following standard has been used: 1. Very good: Subjectively perfect for any sort of work; in some cases slight deformity was present. 2. Good: Able to do heavy work—e.g., as labourer, cobbler, washing, and wringing, but with a little pain at times and perhaps slight deformity. 3. Very fair: Able to do fairly hard work—e.g., washing but not wringing, i.e., some weakness present. 4. Fair: With a fairly strong grip, and able to do light work—e.g., sewing but not heavy work or washing. 5. Bad: Unable to work at all from swelling, stiffness, and pain.

It will be noted how much the occupations of women came into this list, a natural consequence of the preponderance of middle-aged and old females amongst the subjects of this fracture. Twenty-one cases were not traced, slipping away in the earlier part of treatment. Of the 70 cases traced, the results were as follows: Very good, 12; good, 36; very fair, 7; fair, 9; and bad, 6. In other words, two-thirds of the cases were useful working results, while 1 case in 12 was hopelessly bad.

Age.—Tak[illegible] one of the [illegible] is shown b[illegible] were as follows: Very good, 48; good, 43; very fair, 49; fair, 47; and bad, 59. The subjects of the cases which did badly were on the average ten years older than the other patients. That age, however, is no bar to good recovery is shown by the good results in two cases in which the patients were over 70 years of age, and in eight cases in which they were over the age of 60 years. Under 40 years of age all cases showed good or very good results.

Length of time of fixation.—The time during which the joint is kept fixed before massage and movement are begun is important. Thus of cases kept splinted for less than 14 days before massage, 37 were good and seven were not good—i.e., very fair to bad; of cases kept splinted for from three to six weeks, nine were good and six were not good.

Severity of fracture.—In this series only a quarter of the cases X rayed showed fracture of the styloid process of the ulna; the usual percentage given is about 50. Of nine cases with fractured styloid process of the ulna, seven were good and two were bad—i.e., 1 case in 4 was bad, a higher percentage than is shown by the series as a whole.

Deformity and results.—Gross deformity is apt to be associated with poor result, yet several cases with bad deformity had good working hands and wrists. Of seven cases with bad deformity three were good, one was fair, and three were bad as regards function. As was previously mentioned, the bulk of the cases showed slight deformity, about one-sixth of the cases being perfect anatomically. The results, then, in cases where the styloid process of the ulna is fractured and where deformity is great show the importance of the initial damage in the prognosis.

Duration of treatment.—The time required for treatment varied from about three to 30 weeks, depending on the length of preliminary splinting and fixation and on the age, as the following table shows, for cases in which the results were good or fair.

Number of cases seen.	Weeks treated, average of	Average of fixation in weeks.	Average age.
7	2-4	1	34
12	4-6	1½	44
8	6-8	1¾	53
12	8-12	2⅕	47
9	12-18	3⅓	60
2	18-24	3½	50
2	24-30	4	70

The duration of fixation would seem from these figures to be of more importance than the age of patients in prolonging the time necessary for treatment.

Conclusions about Colles's fracture.—1. The length of time necessary for treatment before function is restored varies with the length of time the joint is fixed on a splint before massage and movements are instituted. 2. Reduction of the fracture is generally possible to some degree, but seldom entirely. 3. Fixation must be very limited both in amount and duration; an anterior cane splint acts well; a posterior splint is inju[illegible] of the wrist an[illegible] no account be [illegible] ht. 4. In cases [illegible] to increase, good results may be obtained without using splints. 5. A splint helps to prevent deformity, though the latter cannot be completely prevented by a splint; and excessive deformity may lead to impaired use of the limb. 6. Deformity, then, although not of prime importance, is best avoided if possible, but stiffness of joints and tendons is a worse evil than deformity. 7. One to two weeks on a splint will generally suffice, but in hospital practice another week may be advisable, as these patients often try to do things with the hand which are too much for the weak state of the wrist and may lead to increased stiffness and deformity. 8. Massage and finger movements should be started on the third day at latest; the wrist can be gently moved at the end of a week. 9. Exercises: In from two to four weeks, according to the state of the wrist, stronger active movements can be indulged in. We find that flexing and extending movements of the wrist combined with gripping are most beneficial; this is accomplished by means of a roller of varying diameter (to suit different ranges of grip) arranged like the roller of a jack-towel, but prevented from rotating too easily by graduated friction at one end. The patient practises rotating the roller against the friction, which is increased as the wrist grows stronger, in both directions. In some cases pronation and supination exercises are also necessary. For active movements a handle can be used, made like the handles of some railway-carriage doors, with a graduated friction resistance to movements of supination and pronation. These movements can, of course, be made best against the resistance of a masseur, but in hospital practice the supply of masseurs is far too small for this purpose, and these simple machines take their place in a very satisfactory way.

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[3] Karl Grossmann: THE LANCET, Jan. 16th, 1909; and Glas: Wiener Klinische Wochenschrift, No. 10, 1903.

Old Colles's fracture.—Of this condition 12 cases came under observation at periods varying from seven weeks to 24 years after the initial injury. But of these three could not be traced, five did well, and four did badly. Of the five that did well two of the patients were over 50 years of age, the others being young people of from 20 to 30 years of age; the bad cases were all over 56 years of age. In the case of 24 years' standing there were marked osteo-arthritic changes with tremendous lipping of the joint surfaces. Cases which came under treatment after three months did not do well except one of a child aged 11 years, but with children the prognosis is invariably good.

The Elbow.

Injuries about the elbow-joint provide an interesting and varied set of groups of cases. The varieties and numbers were as follows: Dislocations, 9; sprains, 11; osteo-arthritis, 2; fractured olecranon, 18; fractured head and neck of radius, 10; separated lower epiphysis of humerus, 28; separated internal condyle, 13; separated external condyle, 10; separated internal and external condyle, 1; fractured coronoid, 1; T-shaped fracture, 1; and supracondylar fracture, 5—total, 109.

The elbow is one of the joints most frequently involved in fractures. Injury here is essentially a trouble of childhood and adolescence. With the exception of the cases of fracture of the olecranon almost all of the patients were under 20 years of age, injuries in adults being quite uncommon. Taking the individual groups of cases the following are the particulars.

Dislocated elbow.—Dislocation of the ulna and radius backward occurred six times in children of from 10 to 12 years of age and twice in adults. Treatment lasted from five to eight weeks and all the cases did well. One case attended of old dislocation of both elbows in an adult of five months' standing which had been kept in plaster many weeks. Both elbows were very stiff at a right angle and after several months' treatment did not improve at all. This is a good example of the evils of prolonged fixation of joints in adults; I am glad to say the treatment of this case was not commenced in England.

These cases do not need a splint for more than a day or two, a sling and early massage and movement very soon restoring them to their pristine condition. Should there occur fracture of the coronoid with dislocation, and consequent tendency to re-dislocation, the joint would best be placed in acute flexion for from 10 to 14 days.

Sprained elbow.—Of this condition there were 11 cases, three being those of children from five to 14 years of age, and all did well in from four to seven weeks, though often there was extensive stiffness at the outset. It is a question whether these sprains in childhood are not associated with some undiscoverable injury to the epiphyses. In adults the results were not quite so good; two of the men, though doing heavy work as stevedore and locomotive fireman respectively, complained of incomplete extension of the elbow, and in the latter case of inability to throw coal with full power into the fire-box.

Separation of the lower epiphysis of the humerus.—Of this injury 28 cases attended, and 70 per cent. of these patients were under eight years of age; the youngest was two years old and the eldest was 16 years. In 20 cases the results were good, and about half of these were anatomically perfect; the rest were lost sight of too soon to allow satisfactory conclusions to be drawn. In three cases decided cubitus varus was found; in one case cubitus valgus. With regard to the length of time of fixation before massage and movements were applied little difference was noted. When the cases were splinted for from one to three weeks the duration of treatment averaged seven weeks, but in cases splinted for from four to six weeks treatment had to continue on the average for 13 weeks.

Separation of the internal condyle.—The usual age of these patients, of whom there were 13, varied from 12 to 17 years; the youngest was four and a half years of age, and the age of the eldest was 30 years. The results were 10 good and two fair, one of the latter developing symptoms of osteo-arthritis at the age of 16 years. The length of time the patients in this group were splinted before being massaged had little effect on the length of treatment, which varied from six to eight weeks, in one case lasting as long as 13 weeks.

Separation of the external condyle.—Of nine cases seven were of children aged from four to 10 years. In the six cases traced the result was practically good in all; but one case showed excessive callus about the external condyle, with partial dislocation of the head of the radius and impaired power of extension in an otherwise very useful limb.

Fracture of both external and internal condyles.—One case was noted in a man aged 30 years, which was put up in acute flexion, did well in seven weeks, and was perfect a year later.

Supracondylar fractures of the humerus.—Two children aged six years, and three adults aged from 34 to 60 years, form the total of these cases noted. In the cases of the two children the results were good; in the case of the only adult who was traced the result was fair.

T-shaped fracture of the lower end of the humerus.—One patient, aged 17 years, was wired and treated by movement for a month; when seen a year later he had a useful joint with slightly impeded flexion and extension.

Conclusions with regard to injuries of the lower end of the humerus.—Fractures of the lower end of the humerus, which, as will be seen from the above figures, are usually separated epiphyses, do surprisingly well in spite of initial troubles such as excess of callus, great stiffness, and some deformity. Callus melts away after persisting for months in a most gratifying manner, and in very few cases does one find a great mass of it a year or more afterwards. Gross callus was only noted in two of the cases mentioned here, and both were fractures of the external condyle. Stiffness is overcome by persistent massage and exercises, flexing and extending the forearm against a pulley-weight resistance. Deformity in cases of injury to the lower end of the humerus occurs in four directions—viz., limited flexion, limited extension, cubitus varus or outward kinking of the elbow, and cubitus valgus or kinking inward of the elbow. The first condition, that of diminished flexion, is the most important, and when severe is due to a slipping and rotation backward of the lower fragment of the humerus, so that the ulna can flex completely on the lower fragment without being flexed on the humerus as a whole to anything like the proper extent. This indicates the necessity of flexion in putting up fractures of the lower end of the humerus. When in doubt as to the exact position of the lower fragment flexion of the elbow should be as acute as possible, without causing pressure on the soft parts, which tend to swell. Flexion can be made with safety, perhaps, only to a right angle at first, but by degrees in a few days flexion can be made more acute. Again, when passive movements are commenced—say in from seven to ten days—flexion and not extension should be the early movement.

Incomplete extension of the elbow, though fairly common to a slight extent, is seldom of importance practically; it occurs not only in separation of the epiphyses, but also in sprains and dislocations. It can be overcome by gradually increasing extension movements of the joint, both active and passive; finally, by hanging the body-weight from the arms on the horizontal bar.

The "carrying angle" of the elbow, of which a good deal is made in books, is of slight practical importance. The deviations from the normal, called respectively cubitus varus and cubitus valgus, are seldom great, and unless very great do not interfere with the use of the arm. Cubitus varus is the more common of these two deformities and was found in three out of 28 cases, but in each case, although the elbow appeared awkward and unsightly, the function was good. It is only exceptional movements that are affected by this condition —for instance, striking out a rapid straight blow in boxing or in stoking, or pitching coal with a hard straight-forward thrust.

Valgus is less common—one case was found in 28—and has little immediate effect on the use of the limb. The importance of this condition is that in after years occasionally pressure on the ulnar nerve is produced with pain and paralysis.

Treatment of injuries to the lower end of the humerus.—In most of the cases of this series the elbow was kept fixed at a right angle, best with a posterior gutter-splint. Acute flexion is a safer method when X rays are not at hand to ascertain the exact position of the fragments in order that there may be no risk of rotation backward of the lower fragment and consequently incomplete flexion, but with acute flexion the after-treatment is slightly longer—viz., nine weeks instead of seven on the average.

In these cases the elbow may be moved with safety in a week in the direction of flexion, and pronation and supination movements can be made. There is little harm, however, in leaving the joints of young persons fixed for three weeks. As regards the amount of callus, I have never been able to convince myself that early movement increases callus; on the contrary, some of the cases with the greatest mass of callus had been fixed for several weeks without movement.

Operation is hardly ever required for separation of epiphysis in this region, for in these small patients the parts have a much greater power of repair and adapt themselves much better to circumstances than is the case with adults, in whom comparatively slight displacement is apt to be followed by osteo-arthritis due to a different manner of wear-and-tear of the joint, and in whom, therefore, it is much more important to get accurate apposition of fragments, and operation will be more often necessary.

That osteo-arthritis can develop in the young, is shown by one case of a lad, aged 16 years, whose elbow after a fracture of the external condyle showed well-marked changes of this nature.

Further, in children bone, particularly recently formed bone, can be bent to a considerable degree by muscular efforts continued over a long period of time. It is well known how, after excision of the knee, the hamstrings produce gradual flexion of the originally straight knee, unless a rigid support be applied, a flexion going on for years, although the bone is solid and firmly united; similarly in displacements of epiphyses, by constant exercises the fragments, although united, are pulled in the right direction. Thus a great improvement in shape and function can be attained, and hence the value of continued and carefully arranged exercises in cases where there is deformity. Gentle active movements may be used early and together with passive movements, and are of greater value in restoring the use of the joint.

Fractured olecranon.—There were 18 cases, of which four were wired by open operation. The cases traced showed 12 good and one fair result. The duration of treatment averaged from eight to 10 weeks, whether the cases were operated on or not. The cases not treated by operation were such as had very little or no separation except one, which gave a fair result with one inch separation. Separation of the fragments depends largely on the position of the fracture; when near the tip of the olecranon there is much more likelihood of wide separation than when the fracture is nearer the base.

Cases of fractured olecranon with obvious separation are best wired, though fibrous union and considerable separation may coexist with a very useful elbow.

Cases with little or no displacement can be slung slightly flexed and massaged and moved from the outset. Care must be taken when applying a straight splint for this injury to people of middle age, for the constriction of the splint and bandage together with the dependent position of the hand are apt to be followed by a long-lasting œdema and stiffness of the hand and wrist, which is far more crippling than fibrous union of the olecranon. In brief, if the arm will not admit of flexion to nearly a right angle without much displacement of the fragments operation is the best resource.

Fractured coronoid process.—One case of this injury occurred in a lad, aged 17 years, and was perfect in three months.

Fractures of the upper end of the radius.—In this group are cases where the head of the radius was broken in one or more places or more usually in which the head was broken off the neck, in which case it was usually a separation of the epiphysis. Ten cases of this nature were seen, of which eight were those of children of from seven to 13 years of age, while two patients were men of about the age of 30 years. In seven cases the neck was fractured or the epiphysis of the head was separated and in three the head was fractured. The cases in children were all of good results; those of the men, in which the head itself was fractured, were of only fair results, flexion being limited in one case and extension in the other. Treatment averaged from seven to ten weeks, in one case being as long as 20 weeks.

These cases require nothing but a sling and massage from the start, splinting is here of no avail. If stiffness supervenes, excision of the head of the radius may be performed; after this operation, and also in excision of the head for old-standing dislocation of the radius, there is a tendency for supination to be limited; my impression is that enough bone is not removed and should advise in these cases the removal of as much of the neck as is possible without interfering with the biceps tendon.

The Shoulder.

In this series are included contusions, dislocations, fracture dislocations, fractures of the anatomical and surgical necks, and a few cases of injury to the clavicle, acromion, and great tuberosity.

Dislocations.—There were 25 cases of recent dislocation of the humerus, the ages of the patients varying from 20 to 70 years. In four of them there was severe damage to the brachial plexus or some of its cords. The results were: ten good, five fair, one bad, and nine not traced. Of the cases with nerve injury one was very fair, one was bad, and two left off treatment in three months and were not traced. Treatment as a rule lasted from four to eight weeks. It was very noticeable how prolonged fixing of the shoulder necessitated longer after-treatment; two cases in which the arm was fixed for one month to the side requiring 20 weeks and more of exercises and movements before useful function was restored. The last movement to recover, and the one to remain impaired in those cases which did not perfectly recover, is that of the deltoid. This is due, perhaps, in some cases to slight injury to the fifth cervical nerve trunk; more usually I suspect to keeping the arm overlong at the side and so overstretching the deltoid.

Old dislocations.—There were five cases. One case, not seen until four weeks after reduction of the dislocation, did perfectly. Of three cases not seen for three months after reduction one did well, but the patient was only 22 years of age; the other two, aged 63 and 69 years respectively, were fair results; but the remaining case, in which treatment did not commence for a year after the injury, did not improve at all. These cases required longer for treatment than recent cases—viz., about three months.

Recurrent dislocations.—Three cases. One patient, an epileptic, in whom the right shoulder had been dislocated six times and the left 30 times, did not attend long enough to afford any useful information. Of the other cases, one patient had experienced dislocation six times in six months, the other nine times in 12 months. After a few weeks' treatment the latter was found six months later not to have been re-dislocated, while the former was in good order 18 months later.

Treatment.—In the treatment of dislocated shoulders, after reduction it is most important to find out whether there be any nerve injury, a not uncommon complication, as is shown by the cases quoted above; for whatever is to be the outcome of operations on nerves, freeing, anastomosing, splicing, &c., and at present it is far too early to dogmatise on the results of operations which may take years to be fully developed, it is as well to know at the outset whether any nerve be injured, both in order that it may not later be attributed to bandaging, &c., and that when present its consequences may not be aggravated by treatment.

Except in epileptics or patients recovering from an anæsthetic there is no necessity for bandaging the arm to the side; a sling will be quite sufficient, as a considerable amount of abduction of the arm is necessary to produce re-dislocation. Massage should be used from the beginning, for the movement can be started in from two to three days as a rule, and sho
—i.e., flexio
the latter to
beyond 45° from the perpendicular should be avoided for several weeks, since this is the position likely to produce dislocation—these movements should be active as well as passive; later, circumduction should be practised. A very useful and simple machine for practising active movements consists of a large wheel three feet in diameter, with the axis horizontal and about the height of the shoulder; the handle which turns the wheel is so arranged that the distance from the centre of rotation can be diminished or increased; by turning this wheel movements of circumduction of the shoulder of increasing amplitude are

performed. Later exercising with the pulley weight machine to strengthen the deltoid and triceps is made use of, and finally hanging by the arms to get extension over the head, which is the function of the shoulder most difficult to restore.

It is sufficiently clear from the cases mentioned that early movement means early cure, that delayed movement means lengthy cure or perhaps permanent disability, and that recurrent cases are improved by the restoration of muscular tone with regular exercises.

Fracture dislocation.—Four cases of this injury attended: in two of them the head of the humerus had been excised. Of the latter cases, one, a youth, had an arm which was useful for underhand movements; he could swim well side-stroke, but abduction beyond 45° was impossible. In the other, a middle-aged person, the arm was of little use. The other two cases treated by fixation for a short time and then movement and massage did fairly well, getting abduction to the horizontal or more and good power in the arm. These cases bear out the conclusions of Scudder and Mason from the study of a number of cases of this nature—viz., that operation with replacement of the head of the humerus *in situ* is satisfactory, but that excision of the head gives poor results as a rule, and that the more head and neck that has to be removed the less the working capacity of the limb.

Contused shoulder.—In all the five cases of this nature treated there was great weakness of the deltoid, and in two of the cases there was undoubtedly injury to the fifth cervical root. A point of interest is as to whether most of these cases do not owe their chronicity in great part to some injury of the upper part of the brachial plexus. In all these cases treatment had to be prolonged, lasting from three to six months. In two cases the results were good, in two fair; in one of the latter, although the deltoid was atrophic, the patient could abduct the arm well above the head, apparently by a combination of the biceps and pectoralis major.

Fractures of the surgical neck of the humerus.—Of 14 cases, seven were good, five fair, and one bad, and one was not traced; 60 per cent. of the patients were over 50 years of age. The bad result was associated with and largely due to an injury of the brachial plexus. The length of treatment was from seven to ten weeks.

Fractures of the anatomical neck.—Three cases, the patients all being well over 60 years of age. Two did very well and one was a fair result. The length of treatment was about the same as in fracture of the surgical neck.

Fracture of the great tuberosity.—One case occurred with weakness of the deltoid, possibly due to injury of the fifth cervical root; this case did well after 20 weeks' treatment.

In all these fractures of the upper end of the humerus there is a tendency to keep the shoulder fixed too long before massage and movements are commenced. Fractures in this position unite very readily and in 14 days a good deal of movement can be indulged in without risk of displacement. Such cases should be massaged from the earliest possible time and movement can probably be started in from 7 to 10 days. Keeping the shoulder fixed for a month is far too long. As in the other injuries of the shoulder, weakness of the deltoid is the main and most lasting trouble here.

Fractured clavicle.—Two cases of trouble after fractured clavicle attended, and required from six and eight months respectively before they were in a satisfactory condition. It may not be out of place to give a word of warning about the putting up of fractured clavicles. Too much attention is apt to be paid to getting a very good position of the fragments, with consequent tight application of strapping in the manner of Sayre, which is apt in patients of middle age and upwards to be followed by certain unfortunate results. I will mention three: 1. The hand is kept extended and strapped to the chest and after three weeks resembles a whale's flipper, a condition likely in the elderly to persist indefinitely. 2. Pressure of strapping on the arm affects the nerve- and blood-supply of the forearm, causing œdema, a certain amount of nerve palsy, and, I suspect, a varying slight degree of ischæmic degeneration of muscle, which adds to the rigidity of the hand. 3. Fixing the shoulder often results in prolonged stiffness. A concurrence of these conditions causes the limb to be of neither use nor beauty, and very likely the fragments of the clavicle are still displaced. The digits of the middle-aged should never be fixed when fixation can possibly be avoided. The shoulder in such people should be treated with respect and not restricted for long, but the hand even more so, for a stiff and flipper-like hand is a worse affliction than a stiff shoulder; in putting up a fractured clavicle in the middle-aged, the hand should be left out of the strapping. If it be deemed necessary to get a very good position of the fragments of the clavicle it will be better to cut down and wire; this method is, however, not likely to come much into vogue, for a clavicle which is an abomination to the æsthetic eye of the surgeon may yet be of the greatest service to its owner, provided that there is a useful hand at the end of the limb.

Conclusion.

On the whole, the results quoted are not bad, though certainly admitting of considerable improvement. If modern treatment be carried out, the outlook of fractures involving joints is less gloomy than some would have us believe. Unless cases are made to come and show themselves after treatment has ceased, one gets a false perspective of the results; one sees cases coming up week after week and month after month with very little signs of improvement. Two or three cases of this nature certainly give one the impression that no case, say, of Pott's fracture, ever did or ever will recover the use of his leg, and one is surprised later to find how many of the cases are quite respectable working results. Cases doing well slip away, their treatment is shorter, and they leave less impression on the mind than do those stiff, squab, œdematous, and utterly dreadful-looking ankles which are our constant visitors. With patience and perseverance, however, these latter assume something of their normal proportions and are, at any rate in the majority of cases, exceeding useful and serviceable means of progression. I have found to my surprise the after-result much better than I expected. From the cases discussed the value of early movement and massage will be readily seen in improving and accelerating recovery of function. Massage and movement alone are not suitable for all fractures, though serviceable for a great many more than is commonly supposed. Certain fractures—e.g., Pott's fracture—must have some retentive apparatus to avoid displacement, not to produce immobility of the limb.

In the treatment of fractures and allied injuries, as in a very large number of medical and surgical cases, two great and apparently opposing principles are used—viz., rest and exercise. In the past too much stress has been laid on the importance of rest in cases of injury, and it is largely to the French school that the credit is due of accentuating the importance of the other great factors in treatment, movement and exercise. For movement leads to power of function, and it is by a proper appreciation of the importance of each of these principles and by correlating their application in practice that we shall obtain at length such perfection as is possible in this world of mortal men.

Finsbury-square, E.C.

THE LONDON HOSPITAL MEDICAL COLLEGE.—On July 19th the prizes and certificates were distributed to the successful candidates of the Medical College of the London Hospital. The distribution was made by the Earl of Derby, the treasurer of the hospital. The list of the scholarships and prizes awarded included the following:—Price entrance science scholarship: Mr. D. E. Morley. Price entrance scholarship in anatomy and physiology: Mr. J. Scott Wilson. Entrance science scholarships: Mr. J. R. K. Thompson and Mr. A. R. Elliott. Buxton scholarships in arts: Mr. G. Bluett and Mr. A. P. Ford. Epsom scholarship for students of Epsom College: Mr. K. Biggs. Scholarship in clinical surgery: Mr. A. H. Penistan. Scholarship in clinical medicine: Mr. W. J. O'Donovan. Scholarship in clinical obstetrics: Mr. G. Gushue-Taylor. Duckworth Nelson prize: Mr. A. H. Penistan. Senior Letheby prize in organic chemistry: Mr. J. R. K. Thompson. Senior Letheby prize in inorganic chemistry: Mr. E. Morley and Mr. D. E. Morley. Junior Letheby prize in chemistry and physics: Mr. T. H. Thomas. Sutton scholarship: Mr. A. H. Penistan. Anatomy and physiology scholarship: Mr. T. D. Williams. Anatomy and biology scholarship: Mr. T. D. Williams. Minor surgery prizes: Mr. H. B. Walker, Mr. F. Sanders, Mr. B. R. Khanna, Mr. G. M. Heiron, Mr. W. Morris, and Mr. D. Scott. *Practical anatomy prizes*: Mr. R. G. Brown, Mr. J. V. O. Andrew, and Mr. N. L. Treston. Anderson prizes: Mr. J. S. Jobson, Mr. F Sanders, Mr. H. R. G. Vander Boken, Mr. J. G. Reidy, Mr D. Scott, and Mr. R. E. Quinton. Douro Hoare prize: Mr. H. W. Parrott. Wynne Baxter prize: Mr. E. B. Morley.

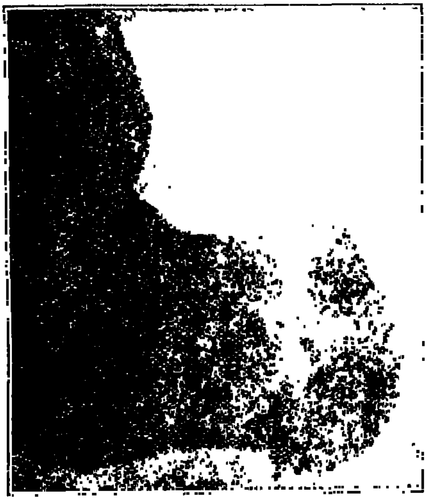
"PAINFUL HEELS.'

BY E. REGINALD MORTON, M.D. TOR., F.R.C.S. EDIN.,
MEDICAL OFFICER IN CHARGE OF THE ELECTRICAL DEPARTMENT, LONDON HOSPITAL; LECTURER ON RADIOLOGY, WEST LONDON POST-GRADUATE COLLEGE.

THE annotation entitled "Painful Heels" in THE LANCET of June 12th (p. 1704) has encouraged me to record the following case, which throws some light on a subject which has, so far, been very little written about. The lady in question was brought to me by Dr. H. Beckett-Overy, to whom I am obliged for permission to publish the following details:—

The patient, aged 60 years, was first seen on April 26th last with a history of pain and tenderness in the right foot and heel, which had got progressively worse during the past four months. At a later date the left foot and heel began to give trouble in the same way. Latterly the pain in the feet had been severe and the tenderness on pressure in each heel had steadily increased. Walking was attended by extreme discomfort, so that she had been unable of late to take any exercise. There was a distinct gouty tendency, but nothing else of a constitutional character. The patient was sent to me in the hope that some form of ionic medication would be helpful, as she was anxious to avoid an operation if at all possible.

FIG. 1.

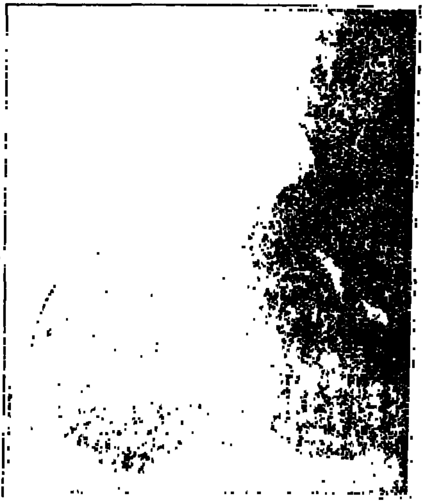


From a skiagram of the right foot.

The case being an unusual one and the diagnosis not at all clear, I suggested that I should make a radiograph of each heel, which I did with the result as shown herewith. (See Figs. 1 and 2.) It will be seen how the development of the thorn-like process, projecting forwards, is more complete on the right side than on the left, and thus exactly conforms to the clinical history. There will also be noticed the thickening of the tubercle of the os calcis, an extra layer of bone being deposited thereon.

Steinhardt considers that gonorrhœa is one of the most common causes, and that males are more often affected than females. Only a few days ago I was informed by a New York surgeon that at least one of his colleagues looked upon these spicules of bone growing from the os calcis as pathognomonic of gonorrhœal infection. Steinhardt, however, admits the possibility at least of the condition being due to gout, rheumatism, and traumatism. The present case was clearly not gonorrhœal.

FIG. 2.



From a skiagram of the left foot.

Ionisation, first with salicylic and later with iodine ions, was tried for a brief period, but, as might have been expected, the result was negative.

I understand that on May 29th the spicules were removed [illegible] the amount of benefit obtained is [illegible] signs of general improvement. [illegible] to walk.

Upper Wimpole-street, W.

PURPURA HÆMORRHAGICA, WITH ABDOMINAL CRISES DUE TO INTESTINAL EFFUSION.

BY G. PERCIVAL MILLS, M.B., B.S. LOND., F.R.C.S. ENG.,
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ON March 21st, 1909, the patient, aged 16 years, was sent to the Salford Royal Hospital by his medical attendant, and complained of severe abdominal pain. The family history was excellent; no tuberculosis or rheumatism. The patient had suffered occasionally from "growing pains." With this exception he had had no previous illnesses. He had never suffered from rheumatism or sore-throat. Ten days previously he had been seized while at work with pain in the lower part of the abdomen. The onset was gradual and at first the pain was only severe when he attempted to lift anything. He vomited once and the pain got so severe that he had to return home and go to bed. The pain was not relieved by rest but came on in frequent paroxysms which were severe enough to necessitate the administration of morphia. He localised the site of the pain vaguely to the lower half of the abdomen and described the attacks as resembling colic. He remained in bed on a fluid diet for ten days, during which no improvement took place.

On admission the patient was seen to be a fairly well-built boy. The expression was pinched and anxious, the tongue dry and brown, and both it and the lips and teeth were covered with sordes. The abdomen was soft and moved freely on respiration. There was slight tenderness on deep palpation in the right iliac fossa, but otherwise examination revealed nothing abnormal. Per rectum nothing abnormal was felt. The temperature was 98·4° F., and the pulse was 80 and of fair volume and force. An aperient was given and the bowels were freely opened three times. The stools were fluid and of normal colour, but contained a trace of blood intimately mixed and a little mucus. Examination of the urine showed nothing abnormal. The patient continued to have attacks of the most violent abdominal pain, rolling about the bed in agony, and his general appearance was one of extreme illness. A provisional diagnosis of chronic intussusception was made.

Operation.—With the consent of Mr. Andrew Boutflower, who kindly allowed me to treat the case, I opened the abdomen through the right rectus muscle on March 23rd. There was a little clear fluid in the peritoneal cavity, and the parietal peritoneum was slightly hyperæmic. Along the whole length of the small intestine there were numerous patches of hyperæmia and œdema. The lowest was a few inches above the ileo-cæcal valve; it extended all round the intestine and was about two inches in length. The intestinal wall was slightly thickened and markedly œdematous and hyperæmic, but there was no extravasation of blood. There were similar patches at intervals of 9 to 12 inches along the whole length of the small intestine, giving it a curiously striped appearance. They exactly resembled one of the cases described by Dr. G. A. Sutherland in THE LANCET of June 26th, except that they did not all extend round the whole circumference of the intestine. About two feet from the duodenum there was a circular scar causing a very slight constriction. It was obviously old and resembled the scar of an old intussusception. There was no deposit of lymph or any other sign of inflammation, old or recent. The vermiform appendix and large intestine were normal. The abdomen was closed in the usual way. On the following day (March 24th) there was only one slight attack of pain and on the next day there was no pain. On the 26th there appeared a few typical purpuric spots on the left wrist. They were grouped together on an area of about one and a half inches by one inch on the ulnar side, and there were no spots anywhere else on the body. Later in the day, however, two small spots appeared on the back of the left hand. On the 27th there were more spots on the back of the left forearm and hand; there was again slight abdominal pain, and blood was present in the stools to the same extent as before. On the 29th spots appeared on both elbows and ankles; the temperature remained subnormal throughout except during the formation of a stitch abscess. On the 30th there was a thick cloud of albumin in the urine; no blood or casts. The total quantity was 36 ounces; general condition better. On April 11th there was profuse hæmaturia, some free fluid in the peritoneum, while the feet and legs were œdematous. The patient seemed much worse. The œdema persisted until May 7th, and the peritoneal fluid until June 20th. At the present time (July 5th) the patient is convalescent; there is no abdominal pain and the fæces are free from blood. There is still, however, a trace of blood in the urine.

The case is of particular interest in view of the theory of the causation of intussusception put forward by Dr. Sutherland in the case already mentioned. Dr. Sutherland quoted a number of cases in which this condition of intestinal effusion was found during a laparotomy for supposed intussusception, and showed that it had been not unnaturally regarded as the result of an intussusception spontaneously reduced. He brought evidence to show, however, that (*a*) all the symptoms of intussusception may be caused by intestinal effusions, and (*b*) that intestinal effusion itself is a cause of intussusception. My case presents a certain amount of evidence in favour of both these views. Before operation it was regarded as a chronic intussusception, and had only one patch of hyperæmia been found a diagnosis of spontaneous reduction would probably have been made. He would be a bold man, however, who would assume the presence of 12 to 15 intussusceptions, all of which had undergone spontaneous reduction, to account for the condition found. Consequently it must be admitted that intussusception may be closely simulated by multiple patches of intestinal effusion, and, if so, why not by a single patch?

The other point of interest centres in the old scar found; its appearance strongly suggested an old intussusception, and the occurrence of intussusception and of intestinal effusions in the same patient is, to say the least of it, suggestive.

NOTE ON THE TREATMENT BY RADIUM OF LYMPHATIC OBSTRUCTION (CERVICAL, SUBMAXILLARY, AND AXILLARY) IN A PATIENT SUFFERING FROM FILARIA NOCTURNA.

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With Comments by DR. H. DOMINICI *and* SIR R. HAVELOCK CHARLES, M.D., *Physician in Ordinary to H.R.H. the Prince of Wales.*

THE remarkable and rapid success that attended the use of radium and the fact that this is perhaps the first occasion that other than surgical measures have been effective in filariasis encourage us to place on record some details of the case. It may be premised that operative removal of the axillary mass had been attempted and abandoned on account of a prolonged syncope under chloroform, and Sir Havelock Charles, consulted by the patient in London, negatived further operative interference.

Authorities are agreed that "no drug destroys the embryos in the blood,"[1] or indeed "has any effect on the worm once it is introduced into the body. For the effects of lymphatic obstruction, elephantiasis, &c., something can be done by careful bandaging and massage, but as a rule surgical operations are necessary if the removal of the deformity is desired."[2] Sir Havelock Charles felt justified, therefore, in recommending a trial of radium and the patient was sent to me for that purpose. During treatment, which lasted six weeks and which in no way interfered with the patient's comfort during the day, his general health improved and he frequently remarked on the pleasantness of Paris as a health resort in spring!

Past history.—The patient, aged 45 years, in a stay of 22 years in India had spent nine in the temperate climate of the hills in the hot weather, the rest in Bengal proper. In 1885 and 1886 he had a three days' attack of high fever in the Nadia district. In 1895 he had a mild attack of enteric fever, and in July, 1906, he caught 24-hours' fever "by sleeping in the jungle." In June–July, 1907, he had a six weeks' attack of "hill-diarrhœa," contracted at a hill station, Shillong, where such illness was common. The following year at Darjeeling he had a similar illness, lasting about the same length of time.

Present illness.—Early in August, 1908, that is to say, when convalescent from his second attack of hill-diarrhœa, he first noticed a swelling above the left clavicle. It caused no pain and was noticed accidentally by the patient. In October a cough developed which the patient could not shake off, and during the next few months his general health failed considerably, although he continued his arduous administrative duties. Early in January, 1909, a swelling was noticed under the left arm, and the civil surgeon who was consulted at the time recommended his going to Calcutta for operation. There Lieutenant-Colonel H. W. Pilgrim, I.M.S., of the Calcutta General Hospital, found filaria in the specimens of blood taken at night, and in consultation with Major R. Bird, I.M.S., professor of surgery at the Medical College, Calcutta, it was decided to remove the axillary mass. A prolonged syncope under chloroform prevented the completion of the operation, but part of the mass was removed and examined by Major L. Rogers, I.M.S., bacteriologist to the Government. On the patient's return to England early in February he consulted Sir Havelock Charles, who also found filaria nocturna embryos in the blood, and expressed the opinion that the enlargement of the axillary and cervical glands was due to their presence and that further surgical interference was inadvisable. He recommended a trial of radium and the patient arrived in Paris on April 7th and had his first treatment on the 10th.

Present condition.—The patient is some four pounds under his normal weight and still suffers from general malaise, especially in the evening, when the temperature, taken carefully four times daily, shows a regular rise of 1½° F. Physical examination detects no abnormality in the heart, liver, abdomen, lungs, or urine. Under the skin in various parts of the body—e.g., the forearm, abdomen, and back—are small elastic tumours apparently fibro-lipomatous in nature. The patient had noticed some of them as long as 14 years ago.

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[1] Osler: Principles and Practice of Medicine, fourth edition, p. 362.

[2] C. W. Daniels, Medical Superintendent of the London School of Tropical Medicine, in Hutchison and Collier's Index of Treatment.

The filarial lesions.—These were in four groups: (1) Left axillary; (2) left cervical; (3) submental; and (4) right submaxillary. 1. In the left axilla was a scar 2 inches in length, at the upper part of which a mass could be felt, deep in the axilla, measuring 4 inches by 2 inches and stretching transversely across the line of cicatrix. 2. Above the left clavicle [illegible] 4 or 5 inches in diam [illegible] rder of the trapezius [illegible] nd posterior triangles [illegible] 1½ inches to each side of the middle line, could be felt a firm, elongated, fleshy mass, l [illegible] d consistence. 4. [illegible] of the size of a cherr [illegible] rs were painful and the skin over them was unaltered.

Radium treatment.—The details of the radium treatment are given in Dr. Dominici's note. It entailed no discomfort or pain to the patient, and under its influence the several glandular masses rapidly diminished in size. By the end of May a small tumour measuring 1 inch by ½ inch could be detected in the axilla at the upper extremity of the scar, and of the cervical adenitis one small gland could alone be felt.

As it had been found that the tumours continued to diminish in size when treatment was suspended for a period of ten days, and as the patient was anxious to return to England, it was agreed to postpone further action till later, if necessary. The patient's general health had improved, his temperature had been normal for over a month, and his appearance was that of perfect health.

NOTE BY DR. DOMINICI.

Le malade fut soigné d'après la méthode radiumthérapique dont j'ai, le premier, exposé les principes et démontré les effets dans une série de communications qui remontent [illegible] Paris, 1907.[3] Cette méthode que [illegible] u Rayonnement ultrapénétrant," [illegible] nement du radium au moyen d'écrans de métaux denses (plomb, or ou argent) de 4/10 de mm. à plusieurs mm. d'épaisseur. Utilisés à doses thérapeutiques et avec certaines précautions les rayons qui ont franchi ces écrans métalliques restent capables de déterminer la régression soit de certaines tumeurs, soit de certains processus inflammatoires dont les éléments sont vraisemblablement beaucoup plus sensibles aux rayons filtrés que ceux des *tissus normaux.*

Les adénopathies furent soumises au rayonnement des appareils suivants: 1° Un appareil à sel collé, rond, supportant 5 cg. de sulfate de radium pur; 2° Un appareil quadrilatère de 9 cm.q. contenant 2 cg. 1/2 de sulfate de radium pur; 3° Un appareil constitué par deux toiles quadrilatères de 4 centimètres carrés, supportant chacune 1 cg. de sulfate de radium pur.

Ces appareils furent montés suivant ma méthode, c'est-à-dire en superposant à chacun d'eux : 1° Un écran de plomb dont l'épaisseur fut, en la circonstance, de 2 mm. 2° Un écran de papier de 3 mm. d'épaisseur. Le tout était engainé de caoutchouc. Les appareils ainsi montés fournissaient, à *travers leurs écrans, un rayonnement essentiellement constitué* par des γ et des β ultrapénétrants. L'intensité de ce rayonnement était: Pour l'appareil rond, contenant 5 cg. de sulfate de radium pur, 10,000. Pour l'appareil carré contenant 2 cg. 1/2 de sulfate de radium pur, 6000. Pour l'appareil constitué par les deux toiles à 1 cg. de sulfate de radium pur, 7000. Ces appareils furent situés à peu près indistinctement sur les différentes régions malades, exception faite en ce qui concerne celui formé par les deux toiles et qui fut destiné à la partie la plus élevée du creux axillaire. Grâce à la souplesse relative des toiles et du plomb, on donna à l'appareil une forme concave-convexe de manière à l'adapter, par sa convexité, à la concavité de l'aisselle.

Les applications furent réparties de la façon suivante : Adénopathies sous-maxillaires gauches, 4 applications à gauche, 4 applications à droite; Adénopathies sous-maxillaires droites, 2 applications; Adénopathies de la région cervicale gauche, 6 applications; Adénopathies sus-claviculaires, 5 applications; Creux axillaire, 13 applications, dont 6 à la partie tout à fait supérieure. La durée de chaque application fut de 12 à 14 heures. Afin d'incommoder le moins possible le malade, ces applications eurent lieu généralement pendant la nuit, les appareils restant maintenus au moyen de diachylum. Afin de diminuer le nombre total des séances, on pratiquait les applications d'une façon simultanée dans les différentes zones traitées. Les adénopathies sous-maxillaires, sous-mentionnières, cervicales, et sus-claviculaires disparurent complètement sous l'influence du rayonnement.

Le bloc massif constitué par les adénopathies de la région de l'aisselle se résorba peu à peu, en laissant comme reliquat deux ganglions indurés qui persistent encore à la partie la plus élevée du creux de l'aisselle. Si la tuméfaction de ces ganglions persistait, je conseillerais, pour la réduire, d'introduire pendant 24 heures dans l'épaisseur du tissu conjonctif du creux de l'aisselle un des appareils qui ont été construits suivant mes indications et qui sont constitués par une ampoule de verre cylindrique contenant 5 centigrammes de bromure de radium pur, placée dans un étui d'argent ou d'or à paroi de 5/10 de mm. d'épaisseur. Quoi qu'il en soit, les résultats obtenus sont très intéressants pour plusieurs raisons: les adénopathies échappaient à toute intervention [illegible] de l'observation du Dr. Warden. [illegible] étaient à la fois massives, [illegible] Elles ressortaient d'un agent très spécial, puisque celui-ci était un nématode du type des filaires. Or, si j'ai déterminé l'atténuation ou la disparition, au moyen de la radiumthérapie, d'arthrites blennorrhagiques graves, d'inflammations paramétriales, dont s'entourent les cancers de l'utérus, de syphilomes chroniques, étendus et rebelles au traitement spécifique, des éléphantiasis d'origine streptococique, je n'avais jamais expérimenté l'action du rayonnement du radium contre les réactions inflammatoires provoquées par un parasite du type *des vers.*

En l'espèce, le rayonnement a paru agir non seulement contre les réactions inflammatoires provoquées dans les tissus par la présence des parasites, mais contre ces parasites eux-mêmes, à en juger par la cessation de la fièvre. Si la disparition de l'état fébrile est en relation avec la destruction des nématodes, il y a lieu d'espérer que le champ d'action du radium s'étendra à d'autres parasites de la classe des vers, et qu'il sera possible un jour de traiter par la radium-thérapie combinée à la chirurgie des affections telles que le kyste hydatique, par exemple.

NOTE BY SIR HAVELOCK CHARLES.

The progress of this case (June 24th, 1909) has been highly satisfactory. When first seen by me nothing could be done surgically, and medicine gave no hope. The patient's condition is well described by Dr. Warden, to whom I sent him. I was able in Paris to note the favourable progress made whilst under treatment. I should desire to draw the *attention of those* who have to do with such affections to the beneficent influence of radium in this case. It promises much, and I think there is a great field before it in filarial trouble. Were I again returning to the tropics I should certainly equip myself with a working quantity of this element for use there. Since my lot is differently cast I suggest to others the trial in favourable cases of the radium treatment.

A SURREY CONVALESCENT HOME.—Sir Trevor Lawrence, Bart., presided over the gatherings in connexion with the S [illegible] Home for Men at Seaford, Sussex, he [illegible] The Home was built and [illegible] ander, and was opened in [illegible] lge. The Duke of Teck is [illegible] no fewer than 10,133 patients have passed through the Home, 613 during the year just ended. The financial position of the Home has been well maintained, but extraordinary expenditure during the past year has resulted in a deficit of £87.

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[3] H. Dominici: De l'utilisation des rayons du radium en pathologie. [illegible] applications du radium.

DISTRICT MEDICAL OFFICERS AND THE REPORT OF THE ROYAL COMMISSION ON THE POOR-LAWS.[1]

BY MAJOR GREENWOOD, M.D. BRUX., LL.B. LOND., D.P.H.,

HONORARY SECRETARY TO THE POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

AT the Hull meeting last year I had the honour of reading a paper on the Grievances of District Medical Officers. I referred to the investigation of the Royal Commission then sitting, and stated that most of our grievances had been represented to that body, and I expressed a confident opinion that when its work was completed we should not be forgotten and might hope for an amelioration of many evils that had for long years interfered with the efficiency of our service and the well-being of the State poor. I fear that my confidence in the work of this Commission, in the light of what has happened, was somewhat misplaced, and my hopes for an improvement of our present position more or less premature. We cannot complain that our work in the past has not been recognised, as both in the Majority and Minority Reports there is a fairly ample recognition of our services. On p. 278 (161) we read:—

> Looking to our evidence we are satisfied that the great majority of medical officers efficiently and punctually perform the duties entrusted to them, and that, as we shall show hereafter, many bestow on the poorer classes a considerable amount of attention for which they receive no recompense, &c.

That our complaints have been more than justified is likewise confessed on pp. 268 and 269. But when we look for practical recognition of our long and faithful service what do we find? The proposal of the majority of the Commission is to abolish as soon as possible our office. As members of the class doomed to extinction we can hardly be expected to be delighted with this prospect. But, none the less, we are ready to admit that our service was created for certain public ends, and that if these can be attained better in other ways we have only to submit with the best grace we can.

I think, however, we have a right to express our opinion on what it is proposed to substitute for our services, and to examine and criticise the reasons given by the Commission for so drastic a change. Our present Poor-law system, like the British Constitution, was never created in any cut-and-dried fashion. Both have grown with the needs of the country. Theoretically, no doubt, both might be abolished and re-created with advantage. But in vital matters of this kind it has never been the practice in this country to abolish and root out old institutions in favour of new ideas that may arise from time to time. It has rather been customary to make old institutions fit into new needs and serve for new requirements as they arise by making suitable amendments. Such a method may be slow, but there is an element of sureness and stability about it which is not to be despised, and it is well recognised in the history of civilisation that the most revolutionary changes are not always followed by a maximum of advantage.

In my opinion there is too much of the spirit of destruction in the report before us; too much desire manifested to overthrow and build anew on entirely fresh foundations, regardless of the consequences to other important public interests. For two centuries and more men of eminence and ability have laboured in their generation to construct the present system, and its history has been one of continuous, if slow, advancement. Our Poor-law system a century ago was far worse than now, and if we regard the Poor-law medical service of to-day and compare it with what it was according to the description of writers of even a generation ago, we cannot help being struck by the advancement it has made even in that short period.

Some of the foregoing remarks, in my opinion, might apply to the report as a whole, but as it is only my business to deal with Poor-law medical relief, and more especially with that portion which comes within the scope of the district medical officer, I shall in the rest of my paper restrict myself to that subject only. In the first place, why are district medical officers to be abolished? On pp. 278 and 279 (161) the only qualification to the expressed efficiency of the present district medical officers in the eyes of the Commissioners would seem to be because of the evidence of certain witnesses, that some of the State poor are unwilling to employ them and for the following reasons: (1) That the attention they get from the district medical officer is not satisfactory, and that they frequently call in another doctor; (2) that they will often pay a fee of sixpence or a shilling and travel considerable distances rather than employ the district medical officer; and (3) that it is a great hardship not to be able to choose their own doctor. Surely such reasoning is not conclusive! Does it never happen in ordinary medical practice that a patient becomes dissatisfied with the doctor he himself has chosen and calls in another? Where is there any evidence to show that the change of doctors is more common in Poor-law than in other medical practice? Even if it is admitted that there is more likelihood of such a change where the patient has not chosen his doctor, I have no hesitation in saying that a much more frequent change of doctors takes place in the case of contract practice, including in that category Post-Office and other public services, than in Poor-law practice, and it is with contract practice that that of the Poor-law ought to be compared. Yet no one has proposed to abolish contract practice.

With regard to a preference shown by some of the State poor to pay for their medical attendance, this need not detract anything from the efficiency of the district medical officer. Surely, it is right that poor persons should pay, where they can, for their medical wants, and that they should be encouraged to. The suggestion in the Report is that the poor do so because the district medical officer neglects them, but this is not proved—the finding of the Commissioners is all the other way. I consider the calling in of another doctor more often the result of a feeling of independence on the part of the patient, an independence that should be fostered and not discouraged, as I fear may easily be done by some of the proposals of the Commissioners. There is, perhaps, one other consideration that ought to be mentioned, and that a sentimental one but deeply rooted in human nature—viz., the idea that an article is worth just what you pay for it, and where nothing is paid its value is not usually counted high. The expression "pay doctor" not infrequently found on the lips of a poor person no doubt has reference to that idea, and I have heard it applied as a distinction between a private and hospital doctor as well as a Poor-law doctor. The same idea is exemplified on p. 870 of the Minority Report, where it is stated that evidence is shown that certain members of clubs in serious illnesses discard their club doctor and call in a private practitioner. No doubt it is a hardship not to be able to choose your medical relief, but not greater than having the choice of your other relief restricted. The real hardship is being in a a position to require either. Abundant reasons are given by the Commissioners themselves in the Minority Report on p. 874, why such objections cannot be sustained. What is urged there against the principle of permitting the State poor their choice of a doctor seems to me trenchant enough and quite conclusive.

There is yet another complaint against the work of the district medical officers generally which must not be overlooked, and it has reference to the kind of treatment they are said to give to the poor. In various parts of the Report it is averred they give no advice to their patients to prevent future illness, that all their efforts are directed to treat the immediate ailments, that they do not regard their sanitary surroundings, and consider their duty ended by visiting and prescribing a medicine. Perhaps this charge is best seen in the Minority Report, p. 851:—

> In too many Unions it is clear outdoor medical relief begins and ends with a bottle of medicine, and in the twentieth century we have ceased to believe in the bottle of medicine.

True, most worthy Commissioners, but are you quite sure that even a considerable portion of the mass of the population throughout the country, for whose welfare you were appointed, hold your views with regard to the "bottle of medicine"? Such criticism, if true, condemns not only Poor-law medical practice but at least nine-tenths of the medical practice of the country. Poor-law medical officers are, in fact, criticised adversely for treating their State patients in the same way that private patients are treated by most of the doctors of the community.

Some years ago I attended a public meeting and heard a well-known hospital physician condemn the exorbitant amount of physic ordered for the out-patients of a large London hospital. The Hon. Sydney Holland was also present and asked, somewhat angrily, why physicians ordered medicines they appeared to think unnecessary. His question I do not think was satisfactorily answered, but I doubt if any experienced medical practitioner was ignorant of the reason—a very sufficient one in my opinion—that the public would have the medicine. The medical practitioner is a servant, if not the slave, of the public, and until his masters are better grounded in the facts of physiology and hygiene, advice given by a doctor, unaccompanied by the inevitable physic, would in many cases only result in the ruin of the doctor. Poor-law medical officers least of all can pose as medical reformers, and if they were to treat their State patients differently from their other patients a storm of indignation would arise from even a twentieth century public.

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[1] A paper read at the annual meeting of the Poor-law Medical Officers' Association of England and Wales held at the Guildhall, London, on July 6th, 1909.

There is, I think, a great deal of misapprehension in the minds of the Commissioners in their criticism of the treatment meted out to their State patients by district medical officers, and in some material points they fail to realise their position. They must be aware that in all medical practice outside the Poor-law, the notions and prejudices of the patients have to be seriously considered by the doctor. Do they think that in the case of pauper patients this is not the case? No district medical officer could properly attend to his district if he were to ride roughshod over all the erroneous and ignorant ideas of his poor patients, telling them dogmatically what they must do and what they must not do, and sternly refusing to compromise in anything. If the patient refuses to follow the district medical officer's advice the latter must still attend him. In no other class of medical practice is the position of the doctor more difficult. Under the present Poor-law system—and so I believe it must be under any Poor-law system—it is impossible for the district medical officer to get rid of his responsibility. Though the patient insult him and will in no wise follow his advice, if the case is serious he dare not leave it, but must continue in attendance, trying by tact and judgment to do the best he can. If every destitute person who chose to set up his opinion against that of the doctor could be haled off to a Poor-law institution, as to a prison, some of this difficulty might disappear, but I do not think the time has yet come when any Parliament would sanction such a procedure.

On p. 269 of the Majority Report we read:—

> It is alleged that the appointment of district medical officer is valuable to the holder apart altogether from the monetary emoluments attached to the post.

This at times must be true, for otherwise, looking at some of the salaries paid, no one could be found to accept such posts. The statement, no doubt, has reference to the introduction to practice that they afford to the young doctor. But if he is going to build his practice on such an appointment he must be specially attentive to his pauper patients and must humour their whims. He must not be too explicit in pointing out their dirty habits, or urge too vehemently sanitary considerations, often as unintelligible to them as objectionable. If he does, he will reap no advantage from his Poor-law office, but rather tend to lose. For, far from recommending, his pauper patients will warn others against him and where they can will themselves call in a "pay doctor." This action on their part will very likely be misconstrued by local philanthropists and put down to neglect on the part of the parish doctor.

On pp. 871, 873, and 874 the Minority Commissioners eloquently denounce certain evils likely to arise where the pauper is permitted to choose his doctor. The district medical officer desirous of gaining practice through the good offices of his pauper patients could not afford to regard these evils quite in the same light as the Commissioners. No doubt the district medical officer who is not seeking general practice through his Poor-law office is in a more independent position than a private practitioner, but it is a great mistake to imagine that even he can afford to follow the lines most favoured by the Commissioners, and they must not forget that if the pauper patient does more frequently change his doctor it may be because the district medical officer does occasionally rise above the mere "bottle of medicine" treatment. *It is untrue to say that* the district medical officer does not take cognisance of the sanitary surroundings of the patient and is careless as to future illness. It is often from the district medical officer that the medical officer of health gets the first intimation of dangerous sanitary defects, and if his first duty is to treat the immediate illness of his patient he is seldom chary of pointing out bad habits and advising their abandonment. But in too many cases it is obvious to him that his advice under the circumstances is practically useless. These are the charges, if charges they can be called, against the efficiency of the district medical officer, that in the opinion of the Majority of the Commissioners warrant the abolition of his office and the transference of his duties to any practitioner willing to undertake Poor-law work.

But as there is a divided opinion it will be necessary to examine the views both of the Majority and Minority. The Majority propose to treat all Poor-law patients in provident institutions, the State paying the contributions of the Poor-law patients, who are to be allowed to choose their own doctors. As all the doctors in the district may, if they like, attach themselves to these institutions, every practitioner can become a Poor-law medical officer. Such a scheme, in my opinion, is as impracticable as it is undesirable. It clashes at once and is inconsistent with other recommendations of the same Commissioners, who are all agreed as to the necessity of an increase of State inspection of Poor-law medical work. Where nearly all medical practitioners are Poor-law medical officers, how could such inspection be carried out? Again, the expense would be prohibitive. Let it be clearly understood from the outset that no such scale of fees as is paid by the contributories to provident dispensaries would be acceptable to medical practitioners undertaking Poor-law work. The rate would have to be much higher, as much more work would be required. All the criticism directed against the work of the present district medical officers by the Commissioners tends to show that medical treatment of the up-to-date provident dispensary would not be sufficient for the State contributories. No one who has any experience of provident dispensary work could truly assert that the treatment there was superior to that given at the Poor-law dispensaries, or that the "bottle of medicine" figured less extensively. Then there would be the little official extras which would have to be paid for—I refer to the keeping of special registers, official reports, &c., no mean item in the work of the district medical officer. It is easy to see that, whatever mode of payment is decided upon, the new system would not be cheaper than the old.

Then as to the utility of the change, is it desirable? Pauperism is a social disease of a very contagious character. For that reason, according to modern doctrines, it should be isolated. If paupers are to be thrust upon provident institutions it must be greatly to the danger of the latter. An infection will have been introduced into a medium where it would be likely to spread like wildfire, and a very potent vaccine indeed would have to be found to inoculate a large portion of the poorer dispensary members to prevent them from seeking to join the ranks of their fellow State-paid contributories.

Then, speaking for the metropolis, I think I am correct in saying, that provident dispensaries have never been a success. The supporters of these institutions have found it more difficult to organise them successfully here than in other parts of the country. An endeavour to graft Poor-law relief upon them would, in my opinion, add considerably to this difficulty. At the present time there are practically no provident dispensaries in the metropolitan area that could be used for this purpose, and if a special attempt were made to create them they would not be supported by the classes for whom such institutions are properly intended, but would result in another series of Poor-law dispensaries with no advantages over the present, and much more expensive. I cordially agree with the Minority Report where it expresses the opinion that the carrying out of a scheme of this kind would bring us "round again to a State medical service, but this time to one of gigantic proportions."

Another criticism, too, might be properly directed against the scheme of the Majority. On p. 290 (200) we read:—

> As regards a gratuitous medical service for the cure of disease, recognise the attraction of the proposal, but we are unhesitatingly opposed to it.

Yet what does it all directly tend to? Let it be granted that in accordance with the recommendations of the Majority we have a large number of dispensary Poor-law doctors, all competing one against another, all interested in getting as many Poor-law patients as possible It must further be noted that the Poor-law doctor will then be doctor and relieving officer combined, so that he can accept as a Poor-law patient any applicant he chooses. He will be paid at least as much for Poor-law as for other patients, so that it will not pay the doctor to be too critical in his selection. If it be urged that abuse can only occur on the first application and that improper persons will afterwards be weeded out by the Public Assistance officer, I can only answer that if the new officer resembles the old it is extremely unlikely. That official will be only too prone to endorse the doctor's opinion. It seems to me that large and widespread gratuitous medical attendance for the poorer classes would be the inevitable result of the carrying out the proposals of the majority of the Commissioners.

At this point it seems desirable to say a few words in reference to the recommendation that the doctor, and not the relieving officer, should in the first instance be the judge of the right of the applicant to claim State assistance. This recommendation has been made because of difficulties that have been shown to exist where the poor have not ready access to the relieving officer, and also because it is stated that many of the deserving poor shrink from applying to that official who would have no scruple in approaching the doctor. That further facilities should be granted in the former case may be freely admitted, but I have no hesitation in saying that the remedy is worse than the disease. While endeavouring to safeguard a comparatively small class of the State poor, the present security of the whole is threatened with regard to obtaining prompt and immediate relief. At the present time, if a legal order is presented to the district medical officer, however awkward or inconvenient the summons, the latter must attend. Under the new arrangement he need only do so if he considers the applicant entitled to his services. This may be a gain to the doctor, but it is by no means certain that it is good for the poor applicant. It is further certain that many more under the new arrangement would seek and obtain free medical relief, but by no means so certain that the increase would include any but an insignificant fraction of those properly entitled to relief who refrain from applying because of having to face the relieving officer.

I now come to the recommendation of the Minority—viz., to retain the Poor-law medical officers as a distinct State service, but to arrange them side by side with the sanitary State service as a branch of the public health department. This proposal is free from many of the objections I have above referred to, and at least, in my opinion, is practical and statesmanlike. In the first place, it recognises what I consider the *sine quâ non* of any system of Poor-law medical relief—that it shall be administered by a separate and distinct public service, in which the officers are removed from considerations inseparable from competitive medical practice, where proper Government inspection is possible, and where the mere "bottle of medicine" treatment, if not entirely done away with, may at least be kept within moderate limits. In other words, it does not propose to destroy the present service, but rather to utilise it in a somewhat different manner. It is true that one of the tendencies would be to make the district medical officership a whole-time appointment and to debar the district medical officer from general practice, but I am not sure that under the present system the tendency is not in that direction. It also might encourage too freely gratuitous medical relief. If the Poor-law medical service, when ranged side by side with the public health medical service, were to minister relief as freely and gratuitously to all classes of the community as is done now by the latter, great dangers might arise. If thereby a higher degree of physical health were attained by the people, it would, in my opinion, be dearly paid for by undermining their independence and pauperising the lower classes of the nation.

On the whole, I am in favour of a continuation of the present system, but with suitable reforms. There are many abuses to be removed and necessary adjustments to be made to meet the requirements of the present day. But I do not think that its fundamental structure is likely to be bettered. As to what authority our service is placed under is a secondary consideration. In no other public service is practical experience in its official work and administration more important, both in the interests of the poor and of the public, and consequently long and faithful service under the Poor-law should be rewarded, as in other public services, by increase of salary and improvement of status.

None of us who have studied the careful and elaborate report of the Commission can fail to recognise the great value of the labours of the Commissioners. Their report is a vast storehouse of facts, throwing much light on the condition of the poor throughout England and Wales. We only demur to the way in which these facts have been employed in elaborating arguments for the sweeping changes proposed in our service. Speaking generally, I think it will be found that nearly all the members of our service would regard favourably most of the proposals of the Commissioners that have met with the unanimous support of the whole body.

Hackney-road, N.E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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THE PRISM AS AN AID TO DIAGNOSIS IN PARALYTIC DIPLOPIA.

By R. BRUCE FERGUSON, M.A., M.D., B.C. CANTAB., D.P.H., &c.,

FORMERLY HOUSE SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL; CLINICAL ASSISTANT, ROYAL LONDON (MOORFIELDS) OPHTHALMIC HOSPITAL, ETC.

ONE occasionally comes across a case of diplopia which seems to transgress all the established rules regarding the position of the false image, and which defies all attempts at making an accurate diagnosis as to the particular muscle at fault. Such a case I have lately had under my care.

The patient was a healthy man, aged 36 years. The right eye was the one affected, and the diplopia appeared rather suddenly, without obvious cause. There was no ptosis or alteration in the pupil; no sign of optic neuritis or other fundus change. I examined him in the usual way, placing a red glass in front of the right eye. When a light was held directly in front of him the false image was displaced downwards and to the left ("left" and "right" here refer to the patient's left and right), and on moving the light to the left, the false image retained the same position. It thus seemed perfectly obvious that I had to deal with a case of paralysis of the inferior rectus. But on bringing the light to the right, the false image at once changed its position, being displaced downwards and to the right, the former crossed diplopia thus becoming homonymous, and paresis of the superior oblique being indicated with equal certainty. This test was repeated on several occasions, and always with the same results. The patient was unable to perceive any increase in the amount of lateral deviation of the false image on moving the light further from the middle line to either side. The question thus arose, which of the two muscles was at fault? Both were probably not affected, since it was difficult to conceive of a lesion which, whilst involving the fourth nerve, should also involve only that branch of the third nerve which supplies the inferior rectus, as shown by the total absence of all other symptoms of third nerve paralysis, such as ptosis or pupillary changes.

I next proceeded to ascertain what could be done in the way of correcting the diplopia with the aid of prisms, and I found that a prism of 6°, base downwards and outwards, and its axis making an angle of 60° with the horizontal, gave a perfect correction. In fitting a prism, the rule is to turn the base in the direction of action of the paralysed muscle. In this case the base was turned down and out; the action of the superior oblique is to turn the eye downwards and outwards. The diplopia was thus entirely corrected by treatment such as would be adopted in an uncomplicated case of paresis of the superior oblique; and the point arises, is one justified in assuming that paralysis of a particular muscle is present, on the ground that treatment for paralysis of that same muscle is alone effective in removing all symptoms? If this assumption be legitimate, and I think it is in the case of the eye, the individual muscles of which possess such distinctive actions, then we have in a prism a most valuable aid to diagnosis in doubtful cases, since it is only necessary to find the prism which corrects the diplopia, and then by noting the direction of its axis and the position of its base, one is at once enabled to state which is the affected muscle.

It is probable that attention has been drawn to this point before, though I am not aware of the fact, nor have I found any reference to it in the text-books. I may add that I prescribed prisms of 3° for each eye; these enabled the patient to attend to his business in great comfort, which he was totally unable to do before; meanwhile slow improvement is taking place under potassium iodide.

New Southgate, N.

A CASE OF RUPTURED UTERUS WITH PERFECT RECOVERY.

By R. N. GEACH, M.R.C.S. Eng., L.R.C.P. Lond.

ON Jan. 28th of this year I was called to see a woman who was in labour. The story of the woman in attendance was that shortly after her arrival the patient began to feel very ill, and complained of acute pain low down in the right side of the abdomen. The labour pains stopped completely, and the woman complained of feeling very cold and sick. Shortly after this she vomited. The lips and cheeks were blue and the face was very pale. On arrival I found the woman in a very collapsed condition, and suspecting some mischief present I proceeded to deliver with forceps, but having some difficulty in keeping them on the head I performed internal version and delivered. The placenta not being born naturally I inserted my hand, previously very carefully made aseptic, in the uterus to remove it and then found a large rent in the posterior wall of the uterus, about six inches long, commencing from the vagina and running upwards [illegible] Having removed the placenta [illegible] serious condition of the patient, [illegible] active surgical treatment, and merely placed the edges of the rent in the uterus in apposition; I did not douche or put in a drainage-tube. When I left the house the patient's condition was desperate, a running pulse, cold extremities, blue face and lips, and shallow breathing. This condition continued for 48 hours, accompanied by a certain amount of abdominal pain, chiefly in the right iliac region. On the day after delivery I showed the case to Mr. H. P. Symonds of Oxford, who agreed with me as to the bad chance of recovery. *On the third day after delivery the patient rallied*, and the symptoms of shock passed off, and then commenced a condition of subacute peritonitis, lasting for three weeks. Champagne and brandy were freely given, and for several days she lived on those stimulants and a small amount of milk and barley water. The temperature varied between 99° and 103° F., with a very feeble and rapid pulse. Cystitis was a complication of the case and there was much vomiting. The temperature came down to normal at the end of the third week, and after another fortnight the patient was able to leave her bed. At the present time the woman is in very fairly good health and performing her usual household duties.

Charlbury, Oxon.

A CASE OF SPASMODIC TORTICOLLIS FOLLOWING CHOREA.

By T. E. LISTER, M.B., Ch.B. Leeds,

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THE patient, a boy, aged 17 years, first began to have spasmodic contractions of both sterno-mastoid muscles alternately about the beginning of April of this year. The condition gradually became worse until April 15th, when he was brought to the out-patient department by his mother. He had two years previously been in the hospital for chorea, which he had *very severely. On April 15th the patient* was put on to the following mixture: pot. brom., gr. xv.; liq. arsenicalis, ♏ iii.; aq. ad ℥ i.; t.d.s. He came to the out-patient department a week later feeling much better, the severity and frequency of the attacks being less. The medicine was repeated, but during the next week he became very much worse and came to the hospital and was admitted.

On admission the patient was very pale and thin. He had very light-coloured hair and was obviously under-developed, having no pubic or axillary hair, and weighing only 4 stones 7 pounds. The spasm affected the sterno-mastoid and also the deeper muscles of the neck, *together with the platysma myoides. At the same time* that the face was forcibly jerked over to the opposite shoulder the patient took a sharp, short inspiration, proving that the inspiratory muscles were affected. The spasm appeared to occur more frequently on the left side, thus jerking the face to the right, but both sides were affected. The successive spasms varied in intensity, some only bringing the chin *slightly towards the right, whilst others brought it into* line with the occiput and the right shoulder. During the spasm the boy's face became paler and the lips distinctly blue. The spasms were more frequent if the patient were being watched or if he became excited. The spasms were so bad that it was almost impossible to feed the patient, and he was not able to hold anything in his hand; *they, however, disappeared during sleep.* The depressor muscles of the inferior maxilla were affected, for at the same time that the inspiration was made the mouth was jerked open. No abnormal signs were found in the skin or deeper parts of the head and neck. There was an oval-shaped prominence over the cardiac area on the left side of the sternum, including the second, third, fourth, and fifth *costal cartilages. It extended from the sternum almost to* the mammary line at its widest part. The cardiac dulness was normal and the apex-beat could be felt at the nipple line in the fifth interspace. There were no abnormal pulsations seen over the cardiac area and no thrill could be felt. The first sound was rather weak at the apex. Over the tricuspid area there was a distinctly snapping second sound. There were *not any bruits heard. There was pulsation in the large* veins of the neck. The knee-jerks were normal, there was no ankle-clonus, and Babinski's sign was absent. No other abnormal signs were found.

Progress in hospital.—On May 5th the spasms had gradually become weaker and fewer. On the 7th no spasms were seen, but a slight twitching of the inferior maxilla was occasionally seen if the patient became excited.

Treatment.—On admission the patient was put to bed in a private ward away from the other patients. Light diet was given, together with the following: Sodii salicylatis, gr. xv.; aq. chloroformi ad ℥i., t.d.s.; virol, ʒi., t.d.s. These medicines were continued until the patient's discharge on May 29th. For three weeks before discharge he had had no spasms and there have been none since.

The special reasons for reporting this case are: that it is unusual to find spasmodic torticollis in a patient so young; also the close connexion which this case seems to have with chorea, which the boy had previously; and, thirdly, the speedy recovery which took place, most cases being particularly intractable.

I am indebted to Dr. F. H. Wood for his kind permission to publish the case.

Wakefield.

Medical Societies.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Fevers in Rangoon.—Preventable Diseases in Siam.—A Case of Amœbic Abscess of the Spleen and a Case of Blackwater Fever.

A MEETING of this society was held on July 16th, with Sir PATRICK MANSON, the President, in the chair.

Lieutenant-Colonel J. R. FORREST, R.A.M.C., sanitary officer, Burma Division, communicated a paper on Fevers in Rangoon. In Rangoon they had not yet emerged far from the period when every case of fever was returned under one of three headings: (1) malaria; (2) simple continued fever; and (3) enteric fever. A further classification, based on easily recognisable features, would not only tend to a clear conception of the fevers with which they had to deal, but would modify and improve treatment. Nowadays it was quite insufficient to return a fever under the heading "malaria." Every medical officer ought to be capable of saying whether a case of malarial fever was (1) simple benign tertian; (2) benign tertian with double infection;

(3) malignant tertian; or (4) quartan. No case ought to be returned as malaria in which the temperature had been unaffected by four days' treatment with quinine, in doses of at least 30 grains a day. It was essential to point out that a case was not necessarily malaria because it had failed to give a positive Widal reaction, yet that was the conclusion to which many diagnosticians seemed to come. Cases were often returned as "dengue," which, he maintained, were not "dengue"; and that because the characteristics of dengue were forgotten or ignored. Dengue was a three-day fever, with a primary and often a secondary rash, with a secondary rise of temperature, the pains were excruciating, and the disease was epidemic. Many of the cases returned as "dengue" were really instances of "pyrexia" of uncertain origin—i.e., to be further differentiated. Moreover, there were in Rangoon many typical cases of what Rogers had called seven-day fever. The saddle-back depression in the temperature curve could not be mistaken. There were general pains, and temporal headache was commonly severe, but the agonising "breakbone" pains of dengue were absent. Microscopically, there was a diminution in the number of polynuclear leucocytes. There was also a fever in Rangoon which did not present the temperature curve of seven-day fever, nor the characteristic signs and symptoms of dengue. It occurred during the rains, ceasing early in September. The temperature curve was like a parabola in form; it might rise to 103° or 104° F., and the course of the fever might extend from three to 14 or 15 days.—Dr. J. L. **Maxwell** pointed out that a better definition of fevers was required.—Dr. C. F. **Harford** said that there were not sufficient data for a proper classification.—The **President** agreed that it was impossible to attempt to classify the fevers in the East because of the want of accurate information.

Dr. P. G. **Woolley** communicated a paper on Preventable Diseases in Siam, in which the value of modern sanitary measures was described. He considered that because gastro-intestinal diseases caused more than half the deaths in Siam, therefore that mortality could be ascribed to water-supplies and was due to preventable causes.

Dr. **Maxwell** read a paper by his brother, Dr. J. **Preston Maxwell** of Amoy, on two rare cases from the Fuh-Kien Province, South China. One was a case of Amœbic Abscess of the Spleen in a Chinaman. The splenic tumour filled the left half of the epigastrium and projected into the right thigh. After an operation, in which 80 ounces of pus were evacuated, the patient recovered. Amœbæ similar to those found in the stools of the patient were discovered in scrapings from the wall of the abscess cavity. The cause of the splenic abscess was ascribed to direct infection from the splenic flexure. The second case was one of Blackwater Fever in a patient who had had attacks of malarial fever that had been insufficiently treated with quinine. When the patient was attacked with the blackwater fever he was given a mixture containing spirit of nitrous ether and spirit of chloroform. The urine slowly cleared and he gradually recovered strength and returned home. Blackwater fever, in spite of the severity and fatality of malarial fever in some parts of the province of Fuh-Kien, was an almost unknown disease there.—Dr. W. **Carnegie Brown** observed that the capsule of the spleen seemed to him to offer sufficient protection against infection from the splenic flexure in a case of amœbic abscess of the spleen.—Dr. J. L. **Maxwell** could not imagine the infection spreading from the splenic flexure. It seemed to him more likely that the infection was carried by the blood-stream.—The **President** said that he suspected that occasionally these sporadic cases of blackwater fever were examples of paroxysmal hæmoglobinuria.—Mr. J. **Cantlie** said he had seen cases of blackwater fever in China in which there was no doubt about the diagnosis. He had treated a case of blackwater fever successfully by giving ten drops of turpentine every four hours.—Dr. **Oswald Baker** said that the geographical distribution of blackwater fever should be accurately determined, and Dr. **Harford** discussed the prophylactic use of small doses of quinine after an attack of blackwater fever.

Mr. J. Sewell, honorary veterinary surgeon to the Zoological Society, has recently performed the minor operation of cutting the overgrown claws of a large lioness after the animal had been anæsthetised in a "chloroform box."

Reviews and Notices of Books.

Moral Instruction and Training in Schools: Report of an International Inquiry. Edited by M. E. **Sadler**, Professor of the History and Administration of Education in the University of Manchester. London: Longmans, Green, and Co. 1908. Two volumes, pp. 538 and 378. Price 5*s.* net each volume.

The two volumes under consideration contain the written reports and the papers read at the International Congress which met in London in the autumn of 1908 to consider the question of moral instruction in schools. There is an introduction by Professor Michael Sadler, in which the evidence brought forward is summed up impartially and clearly, and the origin and *raison d'être* of the congress is described. In 1906 a number of people interested in education met in London to discuss whether "more might not be done by means of moral instruction and training in schools to impart higher ideals of conduct, to strengthen character, and to promote readiness to work together for social ends." So diverse were the opinions in the ensuing discussion that it was deemed advisable to institute an inquiry into the subject of moral instruction in the schools of the United Kingdom and other countries. A council was formed of many hundreds of people, representing all forms of educational experience. Professor Sadler states that "no more representative a council has ever been formed for the investigation of an educational problem in this country." Certainly the matter and method of attacking the problems of moral instruction in the two volumes are as varied as are the people and nations from whom the reports are sent. Not only are all grades of schools represented, primary and secondary, public and private, the pauper and the well-to-do, but all lands from East and West—France, Germany, Switzerland, Norway and Sweden, Denmark, Belgium, America, Canada, Australia, New Zealand, and Japan. It follows necessarily that all points of view are represented, though the different teachers hold different opinions as to the ultimate authority on which morality is based, whether prudential, personal, social, or religious. But whatever their diverse opinions as to the origin of morality, all are agreed that in order to obtain the best out of an individual, both for himself and for the community, it is necessary that the schools should give moral instruction; this most important part of education cannot be left entirely to parental discretion. If the State simply compels the child to have its intellectual faculties trained without giving any indication as to how those faculties may be employed usefully and happily for the community there is certain peril both to the individual and to the State. Though the necessity of moral training is strongly urged in all the reports, there is a diversity of opinion expressed as to whether the instruction should be given directly or indirectly. Direct moral instruction includes parables, talks, or systematic lectures on the virtues—for example, on honesty, thrift, kindness, patriotism, and civic and family duties. Indirect moral instruction includes (1) the cultivation of many-sided interests; (2) the provision of moral atmosphere; and (3) moral training in good habits. Both systems can claim excellent results. From a perusal of the reports we gather that, broadly speaking, in schools with pupils derived from the British middle or wealthy classes, where there is an atmosphere of culture, manners, and refinement in the homes, it is better to teach morality indirectly, but in schools with pupils drawn from our social substratum it is more necessary to give direct instruction in manners and morals.

The importance of combining education of the body as well as of the intellect for the benefit of the scholar's *morale* is demonstrated by Mr. Legge (director of education of the city of Liverpool), who describes the results obtained by the reformatory and industrial schools. In these schools the day was divided into two parts, one of which was devoted to literary and intellectual work, the other to practical and constructive work of a kind calculated to stimulate the interest, hold the attention, and promote the development of the reasoning powers. After five years' trial it was found that the ordinary school work had risen in standard, but more marked still was the increased moral well-being. The children's pride in their honest work had influenced their characters for the better. Quite as impressive were the effects of physical training. "Firm flesh, straight bodies, heads erect, hale complexions, intelligent eyes, and a ready smile; these characteristics were found nearly always to imply in the doctor's book an almost clean sheet, and in the record of conduct little absconding, few offences against morality, next to no bullying; only an occasional case of pilfering or lying." Mr. Legge quotes John Milton, who urged that exercises "will keep them healthy, nimble, strong, and well in breath; is also the likeliest means to make them grow large and tall, and to inspire them with a gallant and fearless courage, which being temper'd with seasonable lectures and precepts to them of true fortitude and patience, will turn into a native and heroic valour, and make them hate the cowardice of doing wrong."

The effect of direct moral instruction based upon purely intellectual and upon religious grounds is well illustrated by the reports from France and Japan respectively. Both are worthy extensive quotation. Mr. Harold Johnson writes a very exhaustive account of the French method, where the moral lessons are often given in a prevailingly sceptical atmosphere. "Be reasonable" is often the final appeal. "No child," says Mr. Johnson, "need leave the primary school in ignorance of the fundamental moral distinctions. ...... Teacher and pupil in the *lycée* and Normal College revel in the subtlest dialectic in truly Socratic fashion and grapple with the profoundest moral problems. ...... This procedure appears to be followed by *quite fatal results. Montpellier reports that most of the professors* admit not having observed any appreciable progress in the character of their pupils as a result of the lessons (given since 1902). One remarked that 'my prizeman in *morals is the biggest knave of the lot.*'" Mr. *Johnson* concludes that while the intellect is crammed with moral problems the physique is neglected and the moral lessons are not brought into active virile contact with the pupil's real life. The moral lessons deal with the homely and prudential virtues, neglecting the larger ideals that give scope to the imagination and draw out the disinterested and higher qualities of human nature. Mr. Reginald Balfour concludes his inquiry into the French system with very similar criticism: "All moral instruction, given without the sanction and appeal to more sacred claims than those of duty to the community or to self, is quite inadequate for its object, namely, the formation of individual character and the foundation of national virtue."

Contrast this state of affairs with that met with in Japan. In that country the child receives, as well as careful direct moral instruction, training in physical development, while love of art and beauty are inculcated into the lessons on manual work, agriculture, and commerce The duties of citizenship are taught to every child. Baron Kikuchi (p. 319, Vol. II.), Minister of Education in Japan (1901–03), contributes the report *on the spirit of Japanese* education. He states: "The effectiveness of the moral teaching in our schools is very largely based upon the almost religious attitude towards the Emperor, and it is effective because the moral instruction in Japan is based upon something very similar to what you would call in England a 'religious sanction.' ...... In Japan we talk of duty, of what we have to do, and we talk very little of rights." The teaching of morals is based on the Imperial Rescript on Education, which, published in 1890, saved the State from drifting away after the inevitable sapping of the old foundations of morality by the Restoration in 1868, when the military class lost their privileges and nothing had been found to take the place of the old Chinese philosophy.

Denmark leads the van in the teaching of what may be called the personal virtues closely connected with the rudimentary facts of life, facts which most nations and individuals either ignore or regard as unable to be dealt with. In the reports from Denmark the subject of sexual hygiene is not regarded as an inexplicable and troublesome problem which individuals must worry out as best they can. In the Danish view, as well as in that of many of our sanest thinkers, it is ignorance that is the cause of the social problem which is the canker at the heart of high civilisations. For the well-being of the individual it is essential that these matters should be placed on a high plane, not relegated to holes and corners. Clear and early instruction is the only chance of raising the moral tone of a nation, of leading to happy manhood and womanhood, and to a purer family foundation. Co-education is general in Denmark. In other countries also, where it has been tried not from motives of economy but from the high ideal of a noble sex-comradeship, the results have been eminently satisfactory for both sexes. The Rev. C. Grant (Harpenden, Herts) writes (Vol. I., p. 248): "If a wise system of co-education were universal in England sexual immorality ...... would become as extinct as hydrophobia now is." This is, of course, a too summary pronouncement, and leads us to suppose that Mr. Grant is not wholly familiar with the situation. The medical profession, who in the near *future will have more influence in schools,* both at home and abroad, than they have hitherto had, know well the difficulty of the problem that lies before those who would instruct the young in the problems of sex, and a majority of *them would probably consider that co-education of the* children made the problem no simpler.

We heartily recommend these volumes to all members both of the teaching and of the medical profession.

Mitteilungen aus der Augenklinik des Carolinischen Medico-Chirurgischen Instituts zu Stockholm. Edited by Dr. J. WIDMARK, Professor of Ophthalmology at the Institute. Ninth Fasciculus. With one plate and 12 figures in the text. *Jena: Gustav Fischer.* 1908. *Pp.* 130. *Price* 5 marks.

OPHTHALMOLOGISTS are familiar with the valuable communications which are issued from time to time from Professor Widmark's Clinic at Stockholm. We do not commend this method of publication, for there are so many good journals devoted to ophthalmology, to which reference is naturally made for recent work on any subject, that these by-products are likely to be overlooked. Moreover, unless they are very freely distributed they may be difficult of access. Widmark's "Mitteilungen," however, are so highly esteemed that they have now attained an assured place in the literature and will be found in most good ophthalmic libraries.

The present fasciculus contains three papers by the editor. The first deals with a case of bilateral detachment of the retina, which underwent what may be regarded as spontaneous cure, *a fact which those conversant with the malady* will consider sufficient reason for publication. The condition appears to have been due to retrobulbar inflammation originating in the ethmoidal and other accessory sinuses of the nose. Two other cases from a similar cause are recorded in the literature, and in both the retinal detachment disappeared. This result, so at variance with that to which we are accustomed, places the cases in a group apart. The possibility of actual indentation of the walls of the globe by an inflammatory deposit, and not a true detachment of the retina, is not considered by the author. Professor Widmark's second paper reports three cases of toxic amblyopia of unusual etiology. Two appear to have been due to the inordinate consumption of coffee, one probably to poisoning with arsenic. The third communication discusses the treatment of sympathetic ophthalmia with sodium salicylate, and extends the observations of Lindahl in a previous fasciculus of the Mitteilungen. The author obtained unusually good results and commends the use of the drug in these troublesome cases. This paper also contains some interesting statistics. Lindahl contributes two papers on the action of lacrymal secretion upon bacteria. Many investigations have been carried out on this subject with ambiguous results. Lindahl finds a definite slight antiseptic effect upon ordinary pyogenic organisms, due to an enzyme. He also shows that human tears contain active agglutinins against staphylococci. Forsmark reports a case of bilateral symmetrical epibulbar leucosarcoma, with details of the histological structure. Gertz describes an apparatus for the estimation of refraction by use of the inverted ophthalmoscopic image. The instrument, which is called the parallax-optokrit, is not likely to replace the retinoscopic mirror. Lamm records two cases, one of a slight congenital malformation of both optic discs, probably remnants of the hyaloid arteries, the other an orbital tumour.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. An Inquiry on Enteric Fever in India carried out at the Central Research Institute, Kasauli, under the direction of Lieutenant-Colonel D. SEMPLE, R.A.M.C., M.D. R.U.I., Director of the Institute; and Captain E. D. W. GREIG, I.M.S., M.D. Edin. No. 32. Calcutta: Office of the Superintendent of Government Printing, India. 1908. Pp. 108. Price R. 1 annas 2, or 1*s.* 2*d.*

FOR a long number of years the etiology of enteric fever has been a fruitful subject of discussion in India. The question has gone through many stages. Thus at one time in Madras Surgeon-General A. Gordon, principal medical officer of Madras, laid it down that there was no such disease as enteric fever in India; to whom succeeded Sir Anthony Home, who, when principal medical officer of His Majesty's Forces in India, issued an order that all cases of fever in which at the post-mortem examination ulceration of the intestines was found were to be returned as cases of enteric fever, no matter what the nature of the ulceration. Naturally, under Home the cases of enteric fever appeared to greatly increase. Then we had that theory so beloved by the Government of India at one date, and which took various verbal forms, such as—that enteric fever was due to "climatic causes"; "that typhoid fever in India is primarily due to climatic influences"; that "geographical position and climatic influences, heat, moisture, organic decomposition, miasmata, and a variety of aerial and telluric conditions are more likely than a specific cause in India." But happily now we are less imaginative, and it would seem that there is nothing so mysterious concerning the prevalence of enteric fever in India. Under the wise initiative of Lord Kitchener an exhaustive inquiry was ordered on the subject in India.

The inquiry, the results of which we are now reviewing, was commenced in April, 1906, at the Central Research Institute, the officers participating in it being Lieutenant-Colonel Semple, the director of the institute; Captain E. D. W. Greig, Lieutenant-Colonel F. Wyville Thomson, I.M.S.; Captain D. Harvey, R.A.M.C.; Captain F. N. White, I.M.S.; Captain E. C. Hodgson, I.M.S.; and Assistant Surgeon Paras Ram. The essential matter to discover was the storehouse of the virus of enteric fever, and consequently the persistence of the disease amongst the troops in cantonments. General sanitary measures only could be adopted for the prevention of the fever in absence of any precise knowledge, and the results of these were not very satisfactory. In 1902–03 Koch commenced his important investigation into the etiology and spread of the disease and at length evolved two very important facts—viz., (1) that the saprophytic existence of the parasite outside the body is very short; and (2) that it lives in the bodies of men for a long time after they have acquired immunity from the disease. So that man, in fact, is the storehouse of the virus, from which he infects susceptible individuals. The conditions as regards enteric fever in Alsace Lorraine appeared to be very similar to those met with in Indian cantonments, and as Koch's precautions against the disease were here very satisfactory Captain Greig was deputed by the Indian Government to proceed to Germany to study the methods on the spot. In 1906 an inquiry into the causation of enteric fever was commenced at the Central Research Institute, Kasauli, and the problems to be solved were: (1) the nature and duration of the saprophytic life of the bacillus typhosus; (2) the duration of its life within the human host; (3) the way in which epidemics are produced. As the result of the inquiry, in which full use was able to be made of Koch's experience, it has been determined, amongst other facts, that the bacillus typhosus continues to be excreted for long periods in the urine and fæces of a certain percentage of the convalescents; that the number of bacilli in the urine is very large; that the "chronic bacilli carriers" are the cause of epidemics; and that enteric fever orderlies may become "chronic bacilli carriers" without having passed through an attack of the disease. Consequently the Commission recommends that the urine or fæces of all convalescents should be submitted to a careful daily bacteriological examination for a prolonged period. A special body of trained men for the purpose of nursing enteric fever patients should be found, for otherwise these "chronic bacilli carriers" under the present system at the end of their period of duty as enteric nursing orderlies return to their units and so become fresh foci of infection. This must for the future be obviated. Lastly, all men—European and native—must be subjected to a careful bacteriological examination before they are permitted to be employed in connexion with the preparation and distribution of food and drink to their comrades.

This report is a most excellent piece of work, the results of which are bound to be beneficial to our Indian Army, but it requires little insight to perceive that difficulties of administration would follow upon the adoption of some of the recommendations.

A Treatise on the Principles and Practice of Medicine. By ARTHUR R. EDWARDS, A.M., M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago. Illustrated. Edinburgh and London: William Green and Sons. 1908. Pp. 1328. Price 33*s.* net.

THIS text-book is written on sound and well-reasoned lines, adequate attention to scientific theories being subordinated to the discussion of the cure or the alleviation of disease. Accordingly, an unusual amount of space has been devoted to treatment, to the detailed consideration of drugs, and to numerous formulæ and prescriptions suitable for the practitioner to use or improve upon. The physiological action of drugs is considered at length, the author's reason for taking this course being that he believes the symptoms of disease are more often confounded with those of the remedies exhibited for its cure than is quite creditable to therapeutics.

The various diseases are considered in the manner usually adopted in text-books on general medicine with the exception that the causative pathology has been blended with the consecutive clinical features of the disease. The general plan which is adopted may be best explained by taking one disease as an example, and we have selected pleurisy for this purpose. The *definition* is first given—"an inflammation of the pleura, rarely primary but usually secondary to tuberculosis or other lung disease, general infections, septicæmic affections, and various diseases in contiguous tissues or organs." The *etiology* is then considered in a very comprehensive manner, the associated pathological conditions being fully indicated. The *bacteriology* is next discussed, attention being drawn to the fact that the etiological classification already given does not correspond to the bacteriological division. The *symptomatology* (which includes the physical signs) is given in great detail, and certain phenomena are mentioned which are not found in recent text-books, such as the rhythmic lateral displacement of the heart which is often marked in medium-sized effusions. *Special forms* of pleurisy are next described. Emphasis is rightly laid on the value of cyto-diagnosis. It is now generally recognised that the presence of an increased number of lymphocytes is characteristic of primary tuberculous pleurisy and affords diagnostic data before the results of inoculation are available. The differential *diagnosis* is well given, and the various difficulties which arise are duly dwelt upon. After a few remarks on *prognosis* the *treatment* is adequately discussed. It will thus be seen that Dr. Edwards carries out his task with systematic thoroughness, while a full index adds to the value of the book.

Lehrbuch der Ohrenheilkunde für Studierende und Aerzte. (Text-book of Aural Therapeutics for Students and Practitioners.) By Dr. GEORG BOENNINGHAUS, Lecturer on Otology; Aural Surgeon at St. George's Hospital, Breslau. With 139 figures in the text and one coloured plate. Berlin: S. Karger; London: Williams and Norgate. 1908. Pp. 376. Price 9 marks 80 pfennig.

Dr. Boenninghaus commences with a description of otoscopy, and in this chapter there is the time-honoured illustration, so common in most books on otology, rhinology, or laryngology, which shows how the light is reflected from a mirror into a cavity. But there is one point mentioned here in connexion with the examination which is rarely considered in works of this description—namely, the examination of the membrana tympani with a powerful magnifying glass, that which is recommended as being most serviceable being one of 7½ centimetres and 13 diopters. The second chapter is on the parts seen, and the information to be derived therefrom in the otoscopical examination. This part of the book contains many points of interest, and shows an unusual minuteness of observation, together with an ability to record its outcome, as is seen in his consideration of the various angles of the malleus, the shape and sizes of the cone of light, the variations in the short process or in Shrapnell's membrane, or in the stria malleolaris, &c., all of which are carefully illustrated by means of diagrams. The functions and testing of the ear form the subject matter of the third chapter, in which there are many very interesting points which will well repay careful attention. We may especially mention the part in relation to accommodation. It is interesting to note that the tuning-forks recommended vary from C, having 16 vibrations, to C^8 in the treble, having 32,768 vibrations—a much higher tuning-fork than we are in the habit of using in this country. And in contra-distinction to the teaching of Bezold the writer prefers to use the octaves of A, and we may here incidentally remark that in all probability in a noisy place the octaves of A are superior to those of C for the purposes of investigation. Here also we find an extremely valuable contribution to the differential diagnosis between middle-ear and labyrinthine deafness. Moreover, the methods of testing the integrity of the labyrinth are very clearly set forth.

The second part of the book, of which the fourth chapter forms the commencement, is devoted to the special pathology and therapeutics. The fifth chapter is concerned with diseases of the middle-ear, and begins with a description of its anatomy and physiology. In these two chapters there is but little that is novel. After a very excellent *résumé* of the present knowledge of otosclerosis, the sum total of the treatment, according to Dr. Boenninghaus, is massage, by which it is hoped to mobilise the stapes. The sixth chapter deals with diseases of the internal ear, the more modern treatment of attacking the vestibule for vertigo and the cochlea for tinnitus being recommended. The operative methods are dealt with in a separate chapter, and there is a very beautiful plate with 28 coloured illustrations of the tympanic membrane at the end of the book. There is so much in Dr. Boenninghaus's book which is novel, and such frequent evidence of an intimate acquaintance with his subject, that no aurist will be able to peruse it without pleasure and profit.

LIBRARY TABLE.

The Sanitary Officer's Handbook of Practical Hygiene. By C. F. WANHILL, Major R.A.M.C., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Conjoint Board of England, Assistant Professor of Hygiene at the Royal Army Medical College; and W. W. O. BEVERIDGE, D.S.O., Major R.A.M.C., M.B., C.M. Edin., D.P.H. Camb., F.C.S., Analyst to the Army Medical Advisory Board. London: Edward Arnold. 1909. Pp. 151. Price 5*s.* net.—This is a compact handbook of practical hygiene, written by two officers of the Royal Army Medical Corps with the object of supplying an epitome of the laboratory technique covering the examination of water-supplies, sewage, ventilation, calculation of diets, bacteriological problems, and the analysis of foods and beverages. The general scheme is that on which the training in the hygiene laboratories of the Royal Army Medical College is carried out, and which has been found to be satisfactory both for military purposes and for preparation for the Public Health Diploma examinations. The book is interleaved to allow of the reader adding further notes, and teaching of the subject is not attempted, it being assumed that the reader has had previous training and requires merely to refresh his memory with regard to details. Notwithstanding a few errors which appear, mainly of a typographical nature, and which may be regarded as inevitable in a first edition, we have formed a very favourable impression of the work; the authors handle their subjects well, the details of the technique of the various analyses are briefly but clearly described, and the condensation of matter is not unduly carried out.

Principles and Practice of Operative Dentistry. By JOHN SAYRE MARSHALL, M.D. Syr. Univ. Third edition. London and Philadelphia: J. B. Lippincott Company. With 725 illustrations. 1909. Pp. 654. Price 21*s.* net.—The title of this book is a little misleading, inasmuch as a large portion consists in an account of the anatomy and pathology of the teeth somewhat out of proportion to the amount of room allotted to the description of operative measures. We have, however, no quarrel with the author on this score, because he has provided some most excellent reading. The anatomy, development, and histology of the teeth are dealt with in the first four chapters; the descriptions given are good and the same may be said of the illustrations accompanying the text. There is a good account of the bacteriology of the mouth, while the section dealing with the pathology of the dental issues is all that one could desire in a text-book for students. The book, however, from the point of view of operative dentistry, is disappointing and leaves much to be desired. It is strange to find in a modern work the old turnkey advocated for extraction; we thought that such instruments were regarded as relics of the past.

Geschichte der Laryngologie an der Universität Heidelberg, seit der Erfindung des Kehlkopfspiegels bis zum erste Oktober, 1908. (*History of Laryngology at the University of Heidelberg from the Introduction of the Laryngeal Mirror up to October 1st, 1908.*) By Dr. JURASZ, Professor of Laryngology at Heidelberg. Würzburg: A. Stube. 1908. Pp. 54. Price 3 marks.—As the title implies, this is a short history of the laryngoscope from its introduction in Heidelberg up to the present time. The second chapter deals with the clinic from 1875 onwards, and contains amongst other things a list of the contributions to literature founded on the work of the clinic which have been published during this period. This is followed by a list of the lecturers and teachers, and the courses of study as they have varied from time to time. Chapter IV. relates to the question of a permanent laryngological clinic, and gives a *résumé* of the various discussions which have taken place in reference to this. The work is historically interesting.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXVIII., No. 6, July 2nd, 1909. London: Cambridge University Press Warehouse. Price 4*s.* 6*d.*—The contents of this number include the following:—1. The Coagulation of the Blood, Part II., the Actions of Snake Venoms, Peptone, and Leech Extract, by John Mellanby, M.D. Cantab., George Henry Lewes student. 2. On Degenerative Changes in the Nerve Endings in Striated Muscle, in the Nerve Plexus on Arteries, and in the Nerve Fibres of the Frog, by J. N. Langley, F.R.S. This number also contains the proceedings of the Physiological Society for May 15th and for June 5th, 1909, and the table of contents with list of authors who have contributed to the thirty-eighth volume. Dr. Mellanby's article is a long one, and we can only extract some part of the summary supplied by the author. He finds: (1) That the venoms of an Australian viper (Notechis scutatias) and an Indian viper (Echis carinatus) contain principles which generate fibrin ferment from prothrombin. They therefore coagulate any fibrinogen solution to which they may be added. Consequently their active principles are physiologically equivalent to a mixture of tissue kinase and calcium salt, and by analogy may be assumed to consist of substances containing kinase and calcium salt in union with one another. But owing to the paradoxical influence of potassium oxalate on these venoms (this salt largely increases their coagulating activities) the hypothesis is advanced that the active blood-coagulating agents contained in them consist of pure kinase and that the calcium salt necessary to work in conjunction with this kinase is present in the prothrombin or fibrinogen solution adsorbed by the protein. The author also finds (2) that the rapid injection of small quantities of these venoms results in extensive intravascular coagulation, this intravascular coagulation being due to the rapid production of fibrin ferment by the kinase contained in the injected venom and the consequent rapid production of fibrin. His other inferences are that (3) the slow injection of small quantities of these venoms results in the production of fluid blood (negative phase blood), for the ferment is only slowly formed and can be dealt with by the blood and tissues; (4) cobra venom, which does not contain an antifibrin ferment, prevents the coagulation of blood by means of an antikinase; (5) peptone blood coagulates on adding to it birds' fibrin ferment (it does not contain a greater quantity of antifibrin ferment than normal blood derived from the same animal); (6) hirudin contains both an antikinase and an antifibrin ferment.

British Journal of Inebriety.—The July number of this journal contains an article on the Scientific Study of Alcohol and Alcoholism, which gives a brief account of the organised efforts that are being made in this and other countries to promote the study of the alcohol question on scientific lines. The facts set out in the article, which in view of the London meeting of the International Congress on Alcoholism has a very timely interest, will come as somewhat of a revelation to many persons who have been accustomed to associate the literature of this subject with the outpourings of the teetotal orator. It will be an agreeable surprise to them to discover to what a large extent the temper and methods of scientific inquiry have been brought into the investigation of this most important bio-social problem. In England and in several continental countries societies have been founded, mainly under medical auspices, for the special study of alcoholism, and much valuable work has been recorded in the journals published by these bodies. The *British Journal of Inebriety*, which is the organ of the Society for the Study of Inebriety, has done good service in this way, as has also the quarterly journal issued by the sister society in the United States. In Germany and Switzerland, where the temperance movement has always had a stronger scientific inspiration, much attention has been given to investigations concerning the physiological action of alcohol; and many of the leading authorities in the scientific world of Germany are to be found amongst the contributors to the special journals devoted to the study of alcoholism, such as the *Internationale Monatsschrift zur Erforschung des Alkoholismus* and the quarterly publications, *Der Alkoholismus* and *Die Alkoholfrage*. The medical and social aspects of intemperance also receive very full consideration in other scientific periodicals. To be useful to the students, all this voluminous and scattered literature needs to be classified and sifted, and this is one of the functions which has been undertaken by the recently formed "Bureau International contre l'Alcoolisme," which owes its origin to the zeal and energy of Professor R. Hercod. These evidences of a genuinely scientific spirit in the study of this question will be welcomed the more cordially because they contrast so strongly with the fanatical temper which up to recently was the characteristic of a good many temperance reformers.

Man.—The June number of *Man* describes some recent finds of ancient flint implements, and contains a report of an interview between the Prime Minister and a deputation which urged the necessity of establishing an Imperial Bureau of Anthropology within the Royal Anthropological Institute. At this interview, which took place on March 11th, Professor William Ridgeway, in explaining the object of the deputation, said that not only would some knowledge of anthropology be valuable to administrators in the Indian, colonial, and consular services, but there was evidence of its being a factor in commercial success. Mr. Asquith, in his reply, said that tuition in anthropology must be given by the universities, and there was no present prospect of the Government giving financial assistance. We commented on this matter in THE LANCET of April 10th, p. 1055, and adduced arguments showing the value of such a bureau.

Caledonian Medical Journal.—In the opening article of the July number of the *Caledonian Medical Journal* Colonel Kenneth Macleod, I.M.S. (retired), narrates some reminiscences of his connexion with the Durham County Asylum at Sedgefield before entering for the Indian medical examination at Netley. He says that he now looks back on his period of service in the asylum with very kindly thoughts. Dr. A. C. Miller of Fort William contributes a long paper on the medical inspection of school children. Dr. William Stewart of Wiveliscombe, Somersetshire, writes on birds in myth and folklore. In the editorial paragraphs it is announced that the annual meeting of the Caledonian Medical Society will be held at Lancaster on Sept. 17th under the presidentship of Dr. David Blair. The Society offers a prize of £35 for an essay based on the examination of certain ancient Gaelic medical MSS., Scottish or Irish.

Journal of Laryngology, Rhinology, and Otology. Edited by Dr. J. MACINTYRE, M.B.Glasg., F.R.S.E., and Others. June, 1909. London: Adlard and Sons. Price 2*s*.—This number contains a paper by Dr. A. B. Kelly on Some Experiences in Direct Examination of the Larynx, Trachea, and Œsophagus, which is very well worthy of study. The rest of the number is made up of societies' papers and reports, with a few abstracts.

MEDICINE AND THE LAW.

Criminal Procedure where Prisoners are Alleged to be Insane.

IN an address delivered recently before the Legal and Literary Society of Perth Dr. A. R. Urquhart discussed the question of what should rightly be the procedure in criminal cases in which there is a doubt as to the sanity of a person charged with a crime. We gather from the pamphlet[1] which has reached us containing Dr. Urquhart's address, that in Scotland it has been questioned whether it is strictly logical to distinguish between those accused persons whose insanity is obvious, and whom it would clearly be cruel and unjust to try in open court, and those whose mental condition is more doubtful, or with regard to whom there is a disputed question of temporary dementia, possibly claimed to have existed only at the time of the perpetration of the alleged crime. Those who desire to be strictly logical apparently would have the question, "Is the prisoner sane or insane?" determined by a simple affirmative or negative answer before putting him upon his trial, on the ground that a man mentally deranged suffers from an impairment of the mind which prevents him from conducting or directing his own defence satisfactorily. He should, they say, if insane, be treated as such at once without being submitted to trial as a criminal, the matter of whether he did a certain act being allowed to stand over. Others, again, almost equally logical, urge that, be the man sane or insane, the doubt whether he did an unlawful act should not be allowed to hang over his head, but should be elucidated and set at rest. To some extent the procedure in Scotland seems to differ from that in England, tending to the raising and settling of the question of sanity upon the point of competency to plead. In England we are inclined to think that lawyers will consider the procedure now obtaining to be on the whole satisfactory from a practical point of view, and that medical men will be in accord with them as to the manner in which evidence is given and received as to the prisoner's sanity upon the trial which determines his guilt. That is to say, if the prisoner's sanity is to be adjudicated on by jurors after listening to abstruse and possibly contradictory medical testimony before judges who differ from one another in their treatment of the question of criminal responsibility, then that issue is best fought out with the whole of the facts laid once and for all before the tribunal. The two courses open have been referred to above. When a true bill has been found against a prisoner and he is put in the dock to plead, he may be so patently incapable of understanding the proceedings against him that it would be a scandal to let him remain before the court and be tried. In that case an Act of Parliament provides for the point being decided at once by the jury, and in practice there is seldom any dispute with regard to it, although Dr. Urquhart refers to a Scotch case in which the prisoner was found insane as a preliminary, on the application of the prosecuting counsel, in spite of the fact that those defending him were unwilling that this issue should be raised. On the other hand, there are degrees of insanity, and a man may have committed an unlawful act, who, apart from that incident, lived more or less the life that other men live without his neighbours indulging in any special criticism of his mental capacity. If such a man is indicted for a serious offence, possibly for taking the life of another, he himself or his friends on his behalf are often extremely anxious that he should be spared the fate of a criminal, although the prosecution may assert with tenacity that he is sane and deserves to be punished. The determination of the question thus put in issue may, or, indeed, must in most instances, involve the whole of the evidence as to the committal of an act, claimed possibly as a single example of wrong-doing, and as the result of a brief period of temporary derangement. Evidence on these occasions is gone into which is usually unnecessary where the question of fitness to be tried is raised, and it seems to us that the two classes of case must almost necessarily continue, if for no other reason, as a matter of practical convenience. If the issue of sanity at the time of the committal of the act had to be fought out at the initial stage in a doubtful case upon the whole of the evidence, and if the prisoner's mental condition were then found to be sound, obviously he could not be denied the right to plead "Not guilty." Thereupon the whole of the evidence would have to be gone into again upon the question whether, in fact, he committed the act alleged. We need hardly say that after the prisoner has pleaded the prosecution has to prove the case against him, and that he is presumed then to be sane until the contrary is established by evidence. We do not express the opinion that the ascertaining of the mental condition of the accused is conducted in the best manner possible in our criminal courts, or after the prisoner has passed from court to prison; that, however, is not the topic discussed in the address of Dr. Urquhart to which we have referred.

THE UNIVERSITY OF LIVERPOOL.—Professor Harvey Cushing will deliver the fifth Mitchell Banks lecture on Recent Observations on the Pathology and Surgical Treatment of Intracranial Tumour on Wednesday, August 4th, at 4 P.M., at the University of Liverpool.

THE NATIONAL SOCIETY FOR EPILEPTICS: THE CHALFONT COLONY, BUCKS.—The sixteenth annual meeting of the governors of this society was held on July 19th, at the London offices, Denison House, Westminster, Mr. E. Montefiore Micholls being in the chair. He said that the extension of the Chalfont Colony, which had been so rapid in previous years, had continued without abatement during the past 12 months, a new home for 26 epileptic women having been opened in the middle of 1908, while about the same time two homes for epileptic children were commenced which had now been completed, and were to be open in the coming autumn. One of these homes was for boys and one for girls, and there was in either case accommodation for 24 patients. Each of the three buildings referred to had cost about £3500, and the entire amount had in every instance been provided through the generosity of an individual donor, the women's home having been built at the cost of Mr. Frederick Greene, the boys' home at that of the late Mr. C. A. Tate, and the girls' home at that of Mr. H. Woolcott Thompson. The reports of the executive committee and honorary medical staff for the year 1908 were received and adopted. From these reports it appears that the colony has now accommodation for 224 adult patients, but in view of the fact that there are estimated to be at least 40,000 epileptics in this country, of whom a considerable proportion would be suitable cases for treatment at Chalfont, it is obvious that the accommodation is still quite inadequate, and the committee points to the need for additional homes for men as especially urgent in view of the long period—amounting to more than two years—that male applicants have now to wait for admission, during which time the disease becomes confirmed and aggravated and the hopes of cure destroyed or diminished.

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[1] The Present Law of Procedure in Medico-Legal Cases in which Insanity is an Element. By A. R. Urquhart. Edinburgh: William Green and Sons. 1909. Pp. 18.

Picard Island, which is situated about 750 miles south-west of Mahé, the chief island of the Seychelles, and cases of the benign tertian type, with a few isolated quotidian, continued to occur up to the end of August—that is, for a period of about five months—during which time practically all the labourers in the settlement had been attacked, but without any fatal results. Owing to the great distance from the headquarters of the Government of the colony and the scanty means of communication, investigation of the epidemic by a member of the medical staff did not take place till mid-September, when Dr. M. S. Power arrived on the scene. He was able at once, by microscopic examination of the blood of some of the patients who were still ill, to confirm the diagnosis of malaria. The worst cases were sent off by ship to Mahé for hospital treatment, and quinine was systematically administered to the remainder, with the result that the epidemic soon subsided. The outbreak had begun soon after the arrival of a vessel from Manhigo, a French island off Madagascar, where malaria was known to be prevalent. Some of the labourers landed from this ship were at the time suffering from malaria, and within a month the disease had spread to the other workers in the settlement. Careful search was made by Dr. Power on his arrival for anophelines, but without success, this failure being attributed at the time to the fact that the season was unfavourable, mosquitoes being comparatively scarce during the south-east monsoon. The larvæ of culex and stegomyia were, however, found. Further search for anophelines was carried out by another expert during and after the rainy season, also without success, although the investigation lasted some four or five months. It was therefore concluded that there were no anophelines in Picard Island. The absence of these mosquitoes from the islands of the Seychelles group had already been remarked upon by previous investigators, and it was well recognised that malaria was unknown in the islands except in the form of imported cases from Madagascar, Mauritius, or Zanzibar; none of these instances had ever, so far as is known, given rise to fresh cases. A statement, however, is made by the Governor in one of his despatches, but to which none of the medical officers allude, that he has been informed that in the Aldabra group a fever closely allied to malaria has always existed. Assuming, then, that at Picard Island competent experts had failed to find anophelines, it becomes necessary to seek some explanation as to how malaria could have become epidemic in the absence of these transmitting agents. Up to the present the anopheline is the only kind of mosquito which has been proved to be an efficient host for the malaria parasite, though one eminent authority says that in view of the large number of species of mosquito existing in one or another part of the world it would be rash to assert positively that the anophelines are the only mosquitoes which transmit malaria. It is possible to conceive that other species, such as the culex or stegomyia, which were present on Picard Island might in certain circumstances be able for a short time to aid in spreading the disease, though not acting as hosts for the malaria parasite. A mosquito disturbed while biting a malaria patient might immediately afterwards bite a healthy man and transfer blood containing parasites from one to the other. It is believed that something like this occurs in sleeping sickness, the transmitter of which is the Glossina palpalis. But certain other tsetse-flies, the G. morsitans, for example, although unable to act as hosts for the sleeping sickness parasite, do in certain circumstances, such as interrupted feeding, actually convey the disease from the sick to the healthy. But the transmission of malaria in this way could only be on a small scale, though the conditions usually found in labour camps in the tropics are favourable to the spread of disease by mosquitoes.

A more probable explanation, however, may be found in the fact that anophelines occasionally are able to board vessels in infected ports and to travel considerable distances. In the present instance the ship which arrived at Picard Island carried some persons already suffering from malaria, so that it is possible that even if the anophelines were not at first infected they had opportunity during the voyage to become infected. On the arrival of the ship the anophelines would go ashore and there find ample opportunity for biting and infecting fresh subjects. It is possible, too, that the conditions at Picard Island were not favourable to the multiplication of the anophelines, or that their natural enemies, being in force, waged war upon them so that they were gradually thinned out and had ultimately disappeared by the time that Dr. Power commenced his investigations. It is unfortunate that the search for anophelines was, for unavoidable reasons, so long postponed. In the circumstances, and considering the evidence available, we think it would not be safe to say positively that malaria spread in Picard Island without the agency of anophelines. Perhaps further information may still be forthcoming to throw more light on this interesting and important question.

Moral Instruction and Training in Schools.

The question of education is mainly of importance to the medical profession in three respects: (1) physical training; (2) the diseases and defects incidental to childhood; and (3) the prevention of future pathological developments, especially in the direction of nervous disorders. It is recognised that for the complete development of the individual, physical training is of extreme importance, not only as regards its effect upon the growth of the body, but also its beneficial reaction upon the development of the intellect and character. The primary schools are gradually replacing the old Swedish exercises by a modified system more suited to the British temperament than the true Swedish system, which has no apparatus or music. At the present time medical officers of considerable ability are being appointed to inspect the various schools with a view to ascertain the health and physical status of the children. It is expected that they will soon supply important data upon which action can be taken to prevent the physical and mental deterioration which some maintain that the nation is undergoing. The extent of the deterioration has been exaggerated, general inferences having been drawn from abnormal conditions, but tuberculosis is a terrible scourge to the race, and vast benefit will follow in this country upon an inspection of our school children which should discover many chronic diseases, such as tubercle, so that they may be checked in the early stages before irreparable injury has been done.

Perhaps the most important rôle of the physician will lie in his ability to prevent future disaster to the child by the early inculcation of a sound hygiene in all departments of life. Teacher and physician must work hand-in-hand for the prevention of future disease, especially of nervous disease, that shadow which follows civilisation. In another column we draw attention to the International Inquiry held last autumn in London on Moral Instruction and Training in Schools. All the educational authorities (British, Colonial, European, American, and Japanese) agreed that the question of moral training is the heart of the modern educational problem; without it, education is a peril. The weakening of the older religious beliefs, together with the rapid growth of science in directions which appear to contradict much dogmatic religion, have left the young generation without an anchor, without any definite and whole-hearted purpose for the guidance of daily life. Education which is concerned only with the training of the intellect fails in its highest goal, the formation of character, and the recognition of this fact has already in some countries led to the compulsory training of the teacher in the essentials of the psychology of childhood. The older methods of education neglected to train the child to make full use of his senses. Before abstract intellectual and literary work is undertaken the child should have begun to observe with eyes and ears, to study nature without the medium of books, and to employ his hands. The corresponding parts of the brain develop without the child experiencing any of the irksomeness and pain which in the average human being are associated with the first years of the older educational method, which starts with abstract literary training. Instead, the child of the future will easily and pleasantly acquire habits of observation that will be invaluable to him in adult life. With a similar systematic all-round training throughout school-life he will retain the sensation of well-being and *joyous interest and pride in his knowledge that is naturally* associated with the activity of a harmoniously developed personality. Education is largely concerned, Professor WILLIAM JAMES tells us, with "the organisation of acquired habits of conduct and tendencies to behaviour." By early and systematic training in good habits, based on sound psychology, the individual can be fitted to cope with the trials of the average life. Habits of daily self-denial in little things keep the character strong for the day when State or family duties require self-sacrifice in a great thing. The child can easily be taught to regard with disgust over-indulgence in food or drink. Healthy habits in diet would lead to a marked decrease in the disorders of the alimentary canal to which is attributable so much of the bad temper, gloom, irritability, quarrelling, and other antisocial qualities which attain so great a mastery over the adult population. Certainly the majority of the highly educated hysterical and neurasthenic patients are the victims of a system of education which has neglected the inculcation of self-control, self-denial, and the habit of taking a healthy, kindly interest in everything and everybody. Highly-strung adolescents of both sexes, finding themselves without enough professional or other occupation completely to fill their waking hours, and unable from lack of training to do anything except read, sink into idle dreaming, thence to years of introspection and fretful complaining, or fall a ready prey to the too prevalent disease of "nerves." No healthy child or adult should know the meaning of the word "boredom": if the whole personality has been harmoniously developed such a condition is impossible. Many of these sufferers can be brought back to physical health and mental and moral happiness by simple training in how to make use of their dormant faculties, physical, intellectual, and moral. But training in good habits is not always enough. Unless the good habits are systematised into a definite whole, are made to correspond to a scheme or purpose in life, they are liable to break down at any time under temptation. Men who live lives of strictest rectitude in their own homes have been known to throw aside all codes of morality when sent to sparsely populated or more lax communities, without considering that they are at all to blame. Authorities in the study of religion and philosophy differ as to the ultimate sanction of morality, whether it is based upon prudential and personal, social or religious considerations. Into this question the average child, and even the average adult, does not inquire; for all practical purposes of useful life it is enough to teach the indisputable fact that humanity most reveres and respects that man whose morality is consistent, irrespective of time or place, whose life is lived ever as in the presence of a great ideal.

Teachers should be selected for their moral tone, rather than for their athletic and scholastic attainments. The normal human child will respond to the stimulus of a noble character; hero-worship is natural and productive of good both to the child and the nation when employed as a means of education. The child may in after years forget the facts acquired by memory, but not the facts which appealed to the imagination and aroused the disinterested emotions of wonder and admiration. History bears out the importance of private virtue as the source of national greatness. Mr. LECKY writes: "*If you would form a wise judgment of* the future of a nation observe what qualities count for most in public life. Is character becoming of more or less importance? Are the men who obtain the highest posts in the nation men of whom in private life ...... competent judges speak with respect? Are they of sincere convictions, consistent lives, indisputable integrity?" From the point of view of the physician there is no doubt that the man whose life in every daily act as well as on the rare occasions for great deeds, is lived *sub specie æternitatis*, with single-minded reference to an ideal end, is a healthier and happier human being. In the stress of modern civilisation the man who has no unity in his scheme of life and is racked with doubts, the man who frets over trifles and tries with his disjointed and vague philosophy to solve every little point as it arises, whose only measure or ultimate sanction for action is the impulse of the moment—that man is at the mercy of circumstances, his nervous energy is readily exhausted, and he is liable at any time to fall a victim to hypochondriasis, melancholia, or neurasthenia, if not to vice with its attendant evils. It is time to teach the younger generation the great truth that humanity is being driven on an upward path, that the fortunate man is he who early discovers the fact that the Universe is making for good, and that as a consequence virtue is the easier and happier, not admirable work which is being done by the Metropolitan Water Board in the purification of the London water, and by the Local Government Board and local authorities in preventing as far as possible the pollution of the rivers from which the bulk of the London water is obtained is vital to the existence of the inhabitants of London.

WOUNDS OF THE DIAPHRAGM.

As the knife is little used as a weapon in this country wounds of the diaphragm are seldom seen by the surgeon. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of June 27th M. Rabère has reported two cases which present several points of interest. A robust man, aged 29 years, was admitted into hospital an hour after he had been stabbed in the left side of the chest. In the eighth intercostal space and anterior axillary line was a wound three or four centimetres long running obliquely downwards and forwards, from which projected a piece of omentum about ten centimetres long. The patient showed no signs of shock but was excited by alcohol, in which he had been indulging. The respiration was a little panting, but the pulse was strong and regular. The respiratory murmur was weak on the left side, which the patient instinctively immobilised. There were no signs of hæmothorax or of internal hæmorrhage, and no external hæmorrhage or hæmoptysis. The abdomen was supple and showed neither pain nor area of dulness. Under chloroform ten centimetres of the rib below the wound were resected and the underlying pleura was incised. As a result, the omentum, which was strangulated in the wound, was liberated. The omentum formed a guide to the wound in the diaphragm, the upper edge of which wound was seized with forceps and dragged out. This manœuvre tended to prevent the production of pneumothorax. There was no hæmorrhage into the costo-diaphragmatic sinus, which, with the absence of hæmoptysis, indicated that the lung was not wounded. The diaphragmatic wound was slightly enlarged in a forward direction and its upper edge was united to the upper edge of the thoracic wound by two catgut sutures. The herniated omentum was resected, the stump was reduced, and the upper abdominal viscera—spleen, transverse colon, and anterior and posterior walls of the stomach—were explored. There were some clots in the vault of the diaphragm. Minute examination showed that the hæmorrhage was due to wound of an artery in the omentum. This artery was ligatured, the clots were removed, the wound in the diaphragm was sutured with catgut, a drainage-tube was inserted between the diaphragm and the chest wall and the external wound was sutured. Recovery was uninterrupted; some serous fluid escaped from the tube for a few days. The patient got up on the twelfth day, when all that could be detected was some pleural friction. In the second case the wound was exactly in the same place as in the previous case, but there were hæmorrhage in gushes during expiration, hæmo-pneumothorax, abundant hæmoptysis, and signs of severe internal hæmorrhage. Thoracotomy was performed, a flap containing portions of the seventh, eighth, and ninth ribs being raised. A wound of the diaphragm was found through which the left angle of the colon had passed. After reduction of the hernia, rapid examination of the spleen and stomach, and suture of the diaphragm, the lung was explored and a long and deep wound was found in it and sutured with catgut. The pleural cavity contained a large quantity of blood, which was evacuated. The flap was replaced and sutured. The patient died soon after the operation. The necropsy showed that there were no other lesions than those found at the operation. Omental hernia is a frequent sign of wound of the diaphragm. Its mechanism is easy to comprehend; during expiration the diaphragm is in contact with the lateral thoracic wall, and the omentum passes through the parietal and diaphragmatic wounds as if they were one. Wound of the diaphragm indicates immediate operation, for in consequence of thoracic aspiration abdominal viscera readily pass into the pleural cavity, become strangulated, and press on the heart and lungs. Another reason is the possibility of wound of the spleen, stomach, intestine, and liver, or large vessels. Some surgeons have operated by the abdominal route. Lenormant has reported eight cases thus treated, with five deaths. But by this method it is difficult to reach the wounded viscera and, above all, to suture the diaphragm, as the stomach and colon always form obstructions. Continental surgeons are almost agreed that the thoracic route is the best. Lenormant has reported 23 cases in which this was followed with three deaths. It has been objected that in this method pneumothorax may be induced. But many surgeons do not consider it of importance; it may sometimes be easily prevented, as in the first case reported above; and it sometimes already exists, as in the second case.

THE RELATIONSHIP OF THE OPTIC NERVE TO THE SPHENOIDAL SINUS.

DURING recent years it has become more and more apparent that inflammation of the optic nerve and of the deeper structures of the orbit is frequently to be traced to a primary infection of the accessory sinuses of the nasal cavity, especially to the deeply placed and imperfectly known sphenoidal sinuses. Unfortunately these spaces are rarely examined in the usual routine of the post-mortem room, but such records as are available indicate that 30 per cent. of all subjects show disease of the accessory sinuses, the sphenoidal being affected in about 15 per cent. Onodi has shown how closely the sphenoidal and posterior ethmoidal cells abut on the optic nerve. In a paper read before the American Academy of Ophthalmology and Otolaryngology, Cleveland, in September, 1908, and now republished in the report of the Laboratories (Medical Department) of the University of Buffalo, Dr. L. M. Francis and Professor J. A. Gibson record a number of observations on the thickness of the bony partition between the optic nerve and sphenoidal sinus. In a series of 60 skulls they found this to measure 1-100th of an inch or less in 20, 1-50th inch or less in 18, 1-25th inch or less in 10, 1-12th inch or *more* in 12. They also mention the close relationship that exists between the sheath of the optic nerve and the lining membrane of the sinus, so that it is not too much to say that the optic nerve, in the majority of human subjects, lies in the wall of the sphenoidal sinus and is liable to become affected in all the diseases of that sinus. Professor Gibson found that the average distance of the sphenoidal sinus from the nasal spine in the skulls he examined (85 in number) was 57 millimetres, and that in 17 per cent. there was a diverticulum of the sinus which extended into the wall of the orbit. Apparently the nasal cavities are of a greater depth in English subjects, for in a series of observations published some time ago by Mr. H. Tilley, the average distance of the sphenoidal sinus from the naso-labial margin is given as 82 millimetres in the male and 76 millimetres in the female subject.

THE REMOVAL OF KING'S COLLEGE HOSPITAL.

ON July 20th the King, in the company of the Queen and of Princess Victoria, gave another proof of the interest which he takes in the welfare of the sick poor by laying the foundation-stone of the new buildings of King's College Hospital which are to be erected by Mr. W. A. Pite, F.R.I.B.A., facing Bessemer-road at Denmark Hill, and which are to form the new home of the charity that has existed for 70 years in the Strand district. A guard of honour was furnished by the University of London contingent of the Officers' Training Corps. The Hon. W. F. D. Smith, M.P., chairman of the committee, and the generous donor of the 12 acres of land on which the new hospital will stand, presented an address to His Majesty, stating that 600 beds will be accommodated in the new building, which will also have the advantage of a people's park of 30 acres adjoining its south side. The approval of the King Edward's Hospital Fund for the removal scheme had been shown by a gift of £27,000. His Majesty, replying in his usual felicitous terms, fully endorsed the action of the Fund associated with his name. "Your committee's decision to abandon the old building," he said, "and to remove the scene of your labours to a poorer and more populous district, where the need for a hospital was great and the field for its work wide, was a bold step, but I believe it was a wise and right one, and I congratulate the medical and nursing staff on the great opportunity thus given them for increased usefulness. The generous response made to the committee's appeal for funds shows how their decision has been appreciated by the public." He recalled with gratitude the past work of the hospital and mentioned with honour the great career of Lord Lister within its walls, "who, in introducing the antiseptic methods in surgery, rendered an inestimable service to England and to all mankind." After commending the financial needs of the hospital to the benevolent, His Majesty concluded his speech with these words: "I assure you of my continued interest in your hospital and of the sympathy with which I shall watch its future progress. I cannot doubt that the blessing of Almighty God will attend the work to be done by it in its new home." The King then laid the foundation-stone and the Benediction was pronounced by the Bishop of Southwark, the ceremony concluding with a number of presentations to His Majesty. The committee of King's College Hospital is to be warmly congratulated on having passed such an important milestone on the path of its long and anxious labours, and we cannot doubt of the wisdom of the steps it has taken. The removal of the hospital will not only be the means of rendering its benefits easily accessible to a far larger poor population than it serves conveniently at present, but the extension of its beds will form a noteworthy addition to the already unrivalled field of clinical opportunities at the disposal of the London student. This educational function of a general hospital had always been kept in mind by the governing body of King's, which, indeed, was founded by the council of King's College with that end chiefly in view, as witness the following extract from the council's minute book for 1839: "The council of King's College, finding that hospital practice in connexion with and in the vicinity of the said college was indispensable for the complete education of its medical students, did, in the year 1839, take measures for the formation, in the parish of St. Clement Danes, in the county of Middlesex, of a public hospital for the relief of poor, sick, and infirm persons, to be supported by voluntary contributions, and to which the students of medicine and surgery belonging to the said college might, under proper regulations, for ever have access." These objects have not been forgotten, and those who support liberally the appeal for a further sum of £75,000 which the committee is now making will not only assist a worthy charity but will be forwarding the interests of an important school of medicine of the University of London.

ASYLUM OFFICERS' SUPERANNUATION BILL.

THE Asylum Officers' Superannuation Bill has passed its second reading in the House of Commons and is now before a Select Committee. In the present condition of public business in the House it seems little likely that the Bill will become law, and only too probable that this useful reform will be indefinitely postponed. The object of the Bill is to impose an obligation upon asylum authorities to grant superannuation allowances to their officers and servants upon a fixed scale. At present the granting of such allowances is discretionary, and though widely practised it is felt by those concerned that it would distinctly improve the status of asylum workers and attract the right sort of individual to the service of the insane if the grants were not at discretion but of statutory obligation. By the provisions of the Bill the amounts of the grants will differ according to the nature of the employment and the period of approved service, while provision is made for contributions from officers and servants. The supporters of the Bill are of opinion that no additional burden will be put upon the rates, and indeed that the system of contribution will materially reduce the expenditure upon pensions. The Bill was referred to at the eleventh annual meeting of the Asylum Workers' Association which was held on July 14th, and at which Sir William Collins, who was in the chair, was re-elected President of the Association. In moving the adoption of the report he expressed himself strongly in favour of the Bill, which was supported even more strongly by his seconder, Mr. C. Roberts, M.P., an honorary Commissioner in Lunacy, who said that the whole of the Lunacy Commission was in favour of its adoption. A Bill that at once confers a boon upon a highly deserving class and is likely to reduce the rates appears to us one worthy of high commendation, and we hope that a few minutes of the public time may be spared to effect the passage of so excellent a measure.

A CERTIFICATE OF THE CAUSE OF DEATH FOLLOWED BY AN INQUEST.

A DISCUSSION of an unusual kind has taken place at Newcastle-upon-Tyne between a medical practitioner and a coroner, and has been accorded publicity by the local newspapers. Dr. F. C. Coley was consulted by a man, aged 70 years, a builder by trade, who described his symptoms to him and submitted himself to examination. Dr. Coley saw his patient twice during a period of 12 months, the last occasion being on May 28th, and formed the opinion that he had suffered from mild attacks of angina pectoris. On June 28th the relatives informed the medical man that his patient had been found dead in his bed, adding particulars to the effect that he had been fatigued on the previous day and had had to hurry to catch a train. In these circumstances Dr. Coley gave a certificate assigning angina pectoris as the cause of death. The attention of the coroner was called to the case, and he decided to hold an inquest, being apparently of the opinion that owing to the interval of a month which had elapsed since the last visit to the medical man a certificate ought not to have been granted. At the inquest Dr. W. F. Wilson, who had made a post-mortem examination, expressed the opinion that death was due to "heart failure brought on by heart disease," and the jury returned a verdict of "Death from heart failure," further expressing the opinion that Dr. Coley was not justified in giving a certificate of the cause of death in the circumstances. It is hardly necessary to point out that Dr. Coley was perfectly within his rights in giving a certificate if the conditions described to him under which his patient died coincided with the state of his health observed a month before, and that the blame which the coroner allowed the jury to impute was quite undeserved. The case is unusual because the far more frequent cause of complaint against medical men arises out of the withholding of certificates which cannot conscientiously be granted, but which in the opinion of the coroner or the jury would save the necessity of an inquest.

THE METROPOLITAN WATER-SUPPLY.

REPORT ON CHEMICAL AND BACTERIOLOGICAL EXAMINATIONS FOR THE YEAR ENDING MARCH 31ST, 1909.

AN exhaustive report on the results of the chemical and bacteriological examination of the London waters for the 12 months ending March 31st, 1909, has been drawn up by Dr. A. C. Houston, director of water examination, Metropolitan Water Board, and was presented at a meeting of the Board on July 2nd.

The report is a very detailed one, and contains a great number of carefully tabulated analyses in addition to an admirable summary of these results and carefully drawn-up conclusions. The following is an abstract of the more important points contained in it.

I.—*Meteorological Notes.*

Meteorological notes, by Dr. H. R. Mill, are recorded, and the relationship of the rainfall and general meteorological conditions of the different months in the year to the average daily flow of the river Thames and the bacteriological condition of the raw Thames water is illustrated by a table drawn up by Dr. Houston. March and April were the two months of highest rainfall, and they were the months in which the number of bacteria per cubic centimetre of raw Thames water far exceeded the figures for the other months. Dr. Houston points out that meteorological records are indispensable not only for calculating the potential supply of water but also on account of the important light they throw on the seasonable variations in the physical, chemical, and bacteriological qualities of the water. He makes the very important statement that in his view unfavourable meteorological conditions should not afford justification for delivery into supply of imperfectly purified water.

II.—*Statistics of Supply.*

Dr. Houston adds a note of caution to the way in which these figures should be interpreted. There must be adequate storage capacity in the reservoirs both before and after filtration. If there is inadequate service reservoir capacity he points out the great liability there may be of too rapid filtration which, of course, involves the danger of imperfect bacteriological purification. Also it is pointed out that in considering the rate of filtration one must look not to the total rate for a number of beds but to the rate of filtration of each individual bed. One filter bed in which the rate of filtration was too rapid might lead to the pollution of the water from a number of other beds which were working satisfactorily at a proper rate.

III.—*Effect of Storage.*

A very interesting part of the report is the important light thrown on the enormous value of storage of water before filtration. It is stated that in relation to danger to health over-storage is believed to be impossible, and that it is desirable to store a water before filtration for as long a time as it is economically possible. The storage of water may lead to inconvenience in filtration from the overgrowth of algæ and other vegetable growths, since the beds become blocked by the vegetable blanket which forms on the surface of the sand in the filters. This difficulty has been overcome in various ways; thus in 1908 the addition of minute amounts of copper sulphate had a great retarding effect on vegetable growth in the water stored. Also, it has been found that the mixture of a certain amount of unstored river water with stored water prolonged the life of a filter-bed to a great extent. Dr. Houston gives 20 conclusions as to storage, all of which go to show the great value of this process in the purification of water. One of these is very striking: "The use of stored water goes far to wipe out the gravity of the charge that the chief sources of London's water-supply are from sewage-polluted rivers."

IV.—*Research Work.*

Dr. Houston rightly insists that routine work systematically conducted in the Board's laboratories is very important research. During the year special researches have been carried out thus: A first research report has been published showing that if living typhoid bacilli are kept in raw Thames, Lea, and New River water 99·9 per cent. perish within one week. This result proves that the advantages accruing from even a few days' storage are so great that there is no justification for the use for filtration purposes of raw unstored river water. A second research report involved a special search for the typhoid bacillus in samples (collected weekly) of raw Thames, Lea, and New River water. These results were negative, but Dr. Houston adds that negative results of this kind cannot be regarded as absolutely conclusive. A special research report on the Vitality of the Cholera Vibrio in Raw River Water is published and is dealt with below.

V.—*Bacteriological Results.*

Raw water.—The averages for the 12 months were as follows:—Raw Thames water, 2558 microbes per cubic centimetre: highest 8072, March; lowest 1107, July and February. Raw Lea water, 8794 per cubic centimetre: highest 38,469, March; lowest 1706, November. Raw New River water, 1118 per cubic centimetre: highest 3566, March; lowest 233, April. The worst month in each instance was March. Dr. Houston states that in a gravitation scheme with a superabundant source of supply and huge storage reservoirs the amount abstracted for storage purposes should be inversely proportional to the current impurity of the water. In the circumstances pertaining to the London supply this is only possible in a partial sense, but attention must again be drawn to the fact that the amount of river water abstracted during the months when the river contains an excessive number of bacteria is so large as to emphasise the desirability of passing it through storage reservoirs antecedent to its filtration.

A table is contained in the report showing for the Thames and Lea waters the average number of bacteria per cubic centimetre in the raw water for each month of the year and the average daily quantity of water abstracted for waterworks purposes. The table shows that in the months of March and April where the bacterial figures are very high the abstraction figures by no means follow the desirable rule of being inversely proportional to the bacterial impurity.

Filtered water (including Kent and Lea Valley unfiltered water).—The following statement indicates that the exclusive (i.e., exclusive of samples containing 100 or more microbes per cubic centimetre) figures for the filtered waters were small, and the percentage reduction effected by the processes of subsidence and filtration remarkably good as is shown below:—

—	Thames.	Lea.	New River.
Raw water (microbes per c.c.)	2558	8794	1118
Filtered water (microbes per c.c.)	11·3	18·9	6·1
Percentage reduction (microbes per c.c.)	99·6	99·8	99·4

Too much stress, it is added, must not be laid on percentage reduction of microbes. The worse the raw water, the easier it is to obtain a final filtrate yielding satisfactory results on the basis of percentage purification. The order of merit based on the exclusive figures for the filtered waters is as follows:—

	Average number of microbes per c.c.		Average number of microbes per c.c.
Kent	5·3	West Middlesex	12·3
New River	6·1	Chelsea	14·6
Lambeth	7·0	East London (Thames)...	17·6
Southwark and Vauxhall	9·3	East London (Lea)... ...	18·9
Grand Junction	9·9	Kempton Park	19·7

Tests for Special Organisms.

Bacillus enteritidis sporogenes.—

Raw waters.—40·3; 59·6; 82·6 per cent. of the samples of New River, Thames, and Lea water respectively yielded positive results with 100 cubic centimetres of the water.

Filtered waters.—Only 3 per cent. of the samples of filtered waters yielded positive results with 100 cubic centimetres of water. Dr. Houston points out that negative results do not necessarily imply safety as regards the particular organism examined.

Typical bacillus coli tests.—

Raw water.—The results, judged by this test, were unsatisfactory, having regard to the fact that the rivers Thames and Lea are known to be seriously polluted with sewage and that there is every reason to suppose that the majority of the bacilli coli found in the raw waters are of human excremental origin. The average numbers of typical bacilli coli per cubic centimetre were calculated as follows: river Thames, 15; river Lea, 25; and New River, 1.

Filtered waters.—The following table shows the average number of typical bacilli coli per 1000 cubic centimetres of filtered water:—

	Typical B. coli per 1000 c c of water.
Kempton Park	1
Kent, Chelsea, East London (Lea), New River, Lambeth, Grand Junction	2
West Middlesex, Southwark and Vauxhall	3
East London (Thames)	137
Lea derived water, New River derived water	2
Thames derived waters	3
All London waters	2

Dr. Houston adds that without pushing these figures too far it may be said that, taking the London waters as a whole, the improvement effected by subsidence and filtration was 6850 times.

VI.—*Chemical Results.*

The results of periodical analyses of the various raw and filtered waters are carefully tabulated for each month. The purifying effect of subsidence and filtration is well shown by the figures given for the albuminoid nitrogen test and for the oxygen absorbed from permanganate. In each case the figures for the filtered waters are less than half those of the raw waters. The differences between the chemical analyses of raw and filtered waters are, of course, much less striking than the remarkable differences between the bacterial figures given for these two classes of water, the reason being that the chemical impurities are in solution.

Dr. Houston draws the following conclusions from the results of the various investigations made during the year:—

Conclusions.

Raw Water.

1. The unsatisfactory quality of the raw waters, particularly during the winter months.

2. The importance of judicious selection of raw water for waterworks purposes.

3. The *doubt* whether the raw waters, even during the best months of the year, are sufficiently free from impurities to be filtered without antecedent storage.

4. The importance of possessing as full knowledge as possible of the multiple pollutions of the rivers Thames and Lea.

Storage.

uate, duration of storage in

passive storage," and the
e epidemiological point of
view.

Filtration.

7. The unequal, and in some cases too rapid, rate of filtration at the different works

Service Reservoirs

8. The small size of the service reservoirs leading in some cases to variable rates of filtration during the 24 hours.

Filtered Water.

9. The variable and in some cases not altogether satisfactory quality of the water as delivered to the consumers from the different works, and the general deterioration in the results during the winter months of the year.

10. The remarkable percentage improvement in the quality of the

extreme undesirability of ever using unstored raw river water for filtration purposes.

14. The results of the examination of river water antecedent and subsequent to storage, carried out during the last 20 months, clearly

Fourth Report on Research Work.

This report deals with the vitality of the cholera vibrio in artificially infected samples of raw Thames, Lea, and New River water, with special reference to the question of storage. Dr. Houston states that he is content to abide by the general view held that cholera is liable to be water-borne and that Koch's cholera vibrio is the microbe which conveys the disease. He mentions the cholera epidemic which was raging in Russia in 1908 and in the present year, and alludes to the possibility of cholera being conveyed to this country from Russia or India, although there is a first line of defence owing to the vigilance of the Local Government Board, port sanitary authorities, rivers boards, and medical officers of health, which may prevent contamination of our water-supplies. Dr. Houston says that the ravages of cholera in the past forbid the belief that our insular position and temperate climate afford us sufficient protection from this disease.

Eighteen experiments were carried out, namely—six with raw Thames water collected at Hampton, six with raw Lea water collected at Ponder's End, and six with raw New River water collected at Hornsey. These waters were inoculated with large numbers of living cholera vibrios from artificial cultures, and the samples were tested at weekly intervals by various methods and in different media for the cholera vibrios. In every case at the end of one week the percentage reduction of microbes present was over 99·9 per cent., and in every case at the end of three weeks it was found impossible to isolate any cholera organisms from 100 cubic centimetres of the infected sample.

Dr. Houston very fairly points out that he experimented with vibrios which had been grown on an artificial medium and not with organisms taken directly from the excreta of a cholera patient; also that the experiments were necessarily conducted in a laboratory, the conditions being different from those which would obtain if cholera vibrios were present in a storage reservoir. He says that it is always dangerous to argue from the particular to the general and to deduce from the results of artificial laboratory experiments the results likely to occur in natural conditions. He adds that the moderate character of his conclusions will be accepted as evidence of the careful manner in which he has sought to guard against errors of this kind.

Division 2 of the report is concerned with the detailed manner in which Dr. Houston devised methods by which he could with certainty identify true cholera vibrios, and he shows that by means of the technique which he specially worked out he was able to isolate cholera organisms from water if present in amounts as small as one per cubic centimetre. The following conclusions were arrived at:—

1. Cholera vibrios die very rapidly in *raw* Thames, Lea, and New River water as the result of storage in the laboratory. At least 99·9 per cent. perished within one week, and in none of the experiments could

any cholera vibrios (recognisable as such) be found even in 100 cubic centimetres of water three weeks after its infection. In more than half the experiments the results were negative by the second week (see Division 1).

2. The isolation of cholera vibrios from *artificially* infected *raw* river water presents no insuperable difficulties even when the number artificially added is very [illegible] relatively to the bacteria normally present in [illegible]

3. On the other ha[illegible] ul study) to be mistaken for true cholera vibrios were not found in comparable, but non-infected, river water samples examined under precisely similar conditions (see Division 2).

4. All that I have said in the past as regards the advantages of storing river water from the point of view of typhoid fever applies to cholera, and the time required to ensure reasonable safety in the former case is, on the basis of these experiments, more than sufficient in the latter.

5. There are many circumstances which separately, and still more in conjunction, tend to safeguard this country from a cholera invasion. But no responsible authority can regard a cholera visitation as impossible, and, if it is possible, the part played by impure water in the past in spreading the disease should not be forgotten. Fortunately, even an initially impure water can, by adequate storage and efficient filtration, be brought into a condition of reasonable, if not absolute, safety.

6. In the particular case of the metropolitan water-supply there remain four reassuring circumstances even in the extreme (and, it is to be hoped, highly improbable) event of the raw sources of water-supply ever becoming infected with cholera. Firstly, the cholera vibrios, even if they were present in very few numbers, could be detected in the river water by appropriate tests (see Division 2). Secondly, adequate storage of the river water would eliminate the great majority, if not all, of them (see Division 1). Thirdly, the final filtration process, if efficient, would be an additional safeguard of proved value. Lastly, as the result of my experience at Lincoln, I should not be unprepared *in any emergency* to face the responsibility of sterilising the water-supply, if this was thought to be desirable, and so rendering it absolutely safe for drinking purposes. The existence of large storage reservoirs renders such a project quite feasible as a temporary expedient.

7. Although by no means defending the choice of an impure river water for waterworks purposes, the facts revealed in this report appear none the less to be of a reassuring character and to form another link in the chain of evidence which I have sought to establish—namely, that by adequately storing the *raw* impure river waters which constitute the chief sources of London's water-supply, antecedent to their filtration, the safety of the metropolis as regards water-borne epidemic disease (apart from the possibility of accidental infection at the works, or subsequently in the pipes) is almost, if not quite assured.

REPORT OF THE DEPARTMENTAL COMMITTEE ON THE WEST AFRICAN MEDICAL STAFF.

FOR some time there has been dissatisfaction in the West African Medical Staff, more especially in the junior ranks, as regards their prospects in the service, and owing to this and other circumstances candidates of a high class have applied for posts on the staff in insufficient numbers. The Secretary of State for the Colonies therefore decided in 1908 to appoint a Departmental Committee to inquire into the duties, organisation, emoluments, and selection of officers for this service. The Committee, which began its labours in November of last year, consisted of six members, three of whom, including the chairman, Mr. H. I. Read, C.M.G., were officials of the Colonial Office, and three were medical men—viz., Dr. Theodore Thomson, C.M.G., of the Local Government Board; Mr. W. H. Langley, C.M.G., principal medical officer, Gold Coast; and Dr. J. K. Fowler, late Dean of the Medical Faculty, University of London, and senior physician to Middlesex Hospital. The Committee held 13 sittings, at which a number of witnesses were heard, including Sir Patrick Manson, K.C.M.G., medical adviser to the Colonial Office; Sir A. Keogh, K.C.B., Director-General Army Medical Department; Surgeon-General A. M. Branfoot, I.M.S.; Major Ronald Ross, C.B., F.R.S., professor of tropical medicine, University of Liverpool; Professor W. J. R. Simpson, C.M.G., of King's College and the London School of Tropical Medicine; Lieutenant-Colonel J. Will, R.A.M.C., formerly principal medical officer, East Africa Protectorate, and others, some of whom were past or present officers of the West African Medical Staff. The report of the Committee has now been published. It comprises some 24 printed folio pages and contains a number of recommendations, in the forefront of which prominence is given to the creation of an advisory committee the functions of which should extend to East as well as to West Africa. It is urged that this new body would enable the Colonial Office to maintain closer relations with the medical profession and with medical science, and would be capable of offering expert advice to the Secretary of State if he so desired, it on questions connected with tropical medicine and hygiene, including schemes for drainage and water-supply, plans for preventing and stamping out epidemic disease, bacteriological work, &c. It would also be able to advise as to selection of suitable candidates for appointments in the East and West African Medical Staffs, and as to filling up vacancies by promotion in the senior ranks of these services; it would further advise as to courses of study which medical officers should be called upon to undertake before promotion to the higher grade. This advisory committee, it is recommended, should consist of six members, two of whom should be Colonial Office officials representing East and West Africa, one of them acting as chairman; the remaining four members should severally represent tropical medical research, tropical hygiene, medical science and practice, and general hygiene. It is also recommended that if there should be available a retired medical officer of senior rank of the West African Medical Staff able to give the necessary attendance he should be appointed an additional member of the committee.

Duties and organisation.—While of opinion that it is not possible to make a complete distinction between the medical and sanitary duties of the staff, the Departmental Committee thinks that in the large towns such as Lagos, Accra, and Freetown sanitary work may be assigned to special officers who should give their whole time to such duties and who should hold a diploma in public health or an equivalent qualification. In out-stations, where the majority of medical officers reside, these officials must also act as part-time sanitary officers. The Committee advocates, in addition, the appointment of a limited number of the senior officers to devote themselves to the study of sanitation in West Africa, who should make tours of inspection both in coast towns and out-stations, making reports and if necessary recommendations to the principal medical officer. The reports would be forwarded by the latter to the Governor *in extenso*, with such observations and criticisms as might be desirable. The Committee does not favour the creation of boards of health to advise the local governments on questions of health and sanitation. It does not advise the appointment under prevailing conditions of a director-general of the West African Medical Staff; nor does it think that the appointment of an inspector-general is at present warranted. With regard to existing relations of the staff to the executive government and its officers, there appears to have been friction in the past, due, to some extent, to the view held by certain administrative officers that the medical department is subordinate to them and liable to be called upon for any duty at the discretion of these administrative officers. It seems strange to hear that in West Africa medical officers are regarded as having the smallest amount of work to perform, and that therefore they may be called upon in their so-called leisure hours to undertake duties outside their profession without any additional remuneration. There seems, too, to have been a practice of some administrative officers entering, for example, in the hospital visitors' book criticisms which were deeply resented by the medical officers. The Committee is strongly of opinion that the medical staff should be as far as possible restricted to their professional duties. It is pointed out that if these officers are employed in other work during their leisure hours they can take no share in the study and observation of clinical cases, original research, or other scientific work. It is recommended that the principal medical officer of each colony should be *ex officio* a member of the Executive Council and also of the Legislative Council.

Emoluments.—The present scale of pay for medical officers joining the staff is £400 per annum, rising by increments of £20 to £500. Till now the prospect of attaining a higher salary than this was to the majority exceedingly unfavourable. There are at present 167 officers of all ranks in the service, of whom only 21 are in receipt of a salary of £600 or more. Promotion is extremely slow, and naturally this condition of affairs has given rise to great discontent. To deal with this the Committee recommends the creation of a new grade to be termed "first-class medical officers," with a salary commencing at £500, rising by annual increments of £25 to £600. Such of the medical officers who have completed five years' service and who may be reported upon favourably to the Government by the principal medical officer are to be recommended for promotion to the rank of first-class medical officer, subject to the condition that such officer when next on leave will attend a course of study of not less than three months' duration, and subject to his obtaining a certificate of satisfactory attendance, diligence, and proficiency. It is believed that these conditions will, on the one hand, prevent the promotion of unsatisfactory officers, and will, on the other, ensure that deserving officers will not be kept indefinitely serving at a maximum salary of £500, owing to lack of opportunities for promotion. Senior medical officers now receive £600, rising by £20 annually to £700; it is recommended that the increments be £25 instead of £20, and that officers of this grade, as well as those of the higher rank, should receive "duty pay." A recommendation is also made that a new grade of senior medical officer should be created to be named "first-class senior medical officer," with a salary of £700, rising by £25 annually to £800. Senior sanitary officers are to rank as first-class senior medical officers and to draw the same pay; and sanitary officers will rank as senior medical officers, with the pay attached to that grade. Further, deputy principal medical officers' pay is to be increased from £700 to £800, rising by increments of £25 to £900, with duty pay of £160. All principal medical officers should receive duty pay at the rate of £160 a year. No alteration is to be made in the special scale of gratuities to those officers retiring from the staff after nine or 12 years' service; nor is any alteration in the scale of pensions suggested. The question of private practice is discussed; there is none, however, to be had at most stations, and, as a rule, such practice where it is obtainable is allocated to the senior members of the staff. In West Africa difficulties have arisen as to what constitutes private practice and as to fees. The Committee recommends that when any difficulty as to these arises it should be referred in the first instance to the principal medical officer of the colony; and if his decision is disputed, that the matter should be submitted to the Governor for final settlement.

Study-leave is next considered, and it is recommended when the study is undertaken for promotion to the rank of first-class medical officer, that on production of the required certificates the fees should be paid for the officer, as well as the usual railway fares and lodging allowances. In other cases where special courses of study are taken in the interests of the service the same allowances and fees mentioned above should be paid. With a view to fill the sanitary posts already referred to, the Committee urges that medical officers with any aptitude for sanitary work should be encouraged to take the Diploma in Public Health or an equivalent qualification. As regards facilities for scientific research, it is recommended that apart from the Lagos Medical Research Institute already established, other local laboratories in the larger colonies should be provided where research work and routine analyses could be carried out by officers detailed from time to time for the purpose.

Recruitment.—It is hoped that the improved conditions of service recommended by the Departmental Committee will attract in larger numbers candidates of a high class. In the past it has not always been easy for outsiders to obtain information concerning the duties and emoluments of the West African Medical Staff. Vacancies, it is thought, should be made public by advertisement. It is now suggested that there would be advantage in distributing to the principal medical schools of the United Kingdom printed information concerning not only the medical staff but also as to the climate of East and West Africa, exaggerated views as to the unhealthiness of which are held in some quarters; the West Coast of Africa is still regarded by some persons as "the white man's grave." The Committee deprecates the employment of natives of West Africa, or of India, in the West African Medical Staff. There are some other minor points to which considerations of space do not permit us to allude on the present occasion.

Along with the Committee's report is published a despatch by Lord Crewe, dated June 18th, 1909, and addressed to the Governors of the Gambia, Sierra Leone, Gold Coast, Southern Nigeria, and Northern Nigeria, commenting upon the report and some of the recommendations. The Secretary of State on the whole is in agreement with the Committee, but he says there are certain points arising out of the report relating to [illegible] by the Secretary of State, and we see no reason why they should not, many of the causes of dissatisfaction and discontent in the West African Medical Staff will disappear, and the ultimate effects of the improved conditions of service will doubtless attract men [illegible] systematic application, by highly [illegible] fied officers, of the principles of [illegible] and hygiene to West Africa in the future must result in great improvement in the healthiness of these regions, with consequent increase in their material prosperity and economical development.

THE EARLY TREATMENT OF THE INSANE IN THE COUNTY OF LONDON.

THE recommendations of the Royal Commission on the Control and Care of the Feeble-minded have led the asylums committee of the London County Council to suggest the reintroduction next session of the Lunacy Acts Amendment (London) Bill, by which the Council has sought powers to establish receiving houses for the reception of persons mentally afflicted or alleged to be of unsound mind, with the object, if possible, of curing insanity in its early stages.

In a report presented to the Council on July 20th the asylums committee notes with very great satisfaction that [illegible] contains the following statement:—

"We regard it as very important that a free hand should be allowed to committees in dealing with this matter, so that they may be able to utilise many existing agencies for the purpose. We do not consider it at all necessary that in crowded centres of population large and expensive buildings should be erected like the reception blocks of the great county asylums. Separate wards in workhouses or in general hospitals might be used under contract, or existing houses or other buildings adapted. The special advantages of these reception wards for the clinical study of mental disease are so evident that many general hospitals, especially those to which medical schools are attached, would be glad, we think, if they were subsidised, to provide them within their own premises with medical, nursing, and attendant staff complete."

Reviewing the reasons why the establishment of receiving houses is desirable, the asylums committee points out that at present the Council's duty to the lunatic commences with his admission to, and ends with his discharge from, one of the asylums. The initial proceedings—i.e., the information to be given to a justice of the peace as to the insanity of an individual, his removal to a workhouse or infirmary, and thence to the asylum—devolve upon the relieving officer, and in some cases upon the police-constable. In the 30 unions and parishes into which the County of London is divided the methods of dealing with the insane naturally vary considerably. The great majority of those received into the Council's asylums are described as paupers in receipt of relief, perhaps under the authority of Section 18 of the Lunacy Act, 1890, which enacts that a person who is visited by the medical officer of the union at the expense of the union is, for the purposes of the section, to be deemed in receipt of relief. The number *of patients who are removed direct from their homes to the asylums is very small indeed, the practice* having grown up in the metropolis of removing practically all cases to the workhouse under Section 18. It is to be remembered that a very large percentage of the lunatics who become inmates of the asylums have never had cause to seek poor relief and have only entered the workhouse in consequence of their insanity. Their removal to the workhouse is often considered by the friends a great hardship and the practice is frequently complained of. There is, however, at present, apart from the workhouse, no available house of reception for alleged lunatics. In cases where the relieving officer takes proceedings he does so in a quasi-independent capacity, and as regards the medical examination of the patient the medical officers of the unions have no legal claim to be called in by the justices in preference to any other duly registered and qualified practitioner. In some unions and *parishes of London* the medical officer does not certify lunatics, but an independent outside medical practitioner is called in by the justice of the peace. In the majority of unions and parishes the opposite is the case, and a medical officer of the union certifies and receives a fee for so doing.

The scheme proposed by the committee is that the Council should provide receiving houses to be entirely under its supervision and staffed by its officers, to which an alleged lunatic will be taken instead of to the workhouse. The medical superintendent of the receiving house will have power to detain the alleged lunatic for not exceeding three days, but before the expiration of that period he must bring him before a justice or else discharge him. The medical superintendent is to report to the justice whether, in his opinion, the alleged lunatic should be sent to the county asylum or be detained in the receiving house. If the justice decides that the case is one for asylum treatment, the usual proceedings under the Lunacy Act, 1890, will be taken. If, however, he decides that the case is one for detention in the receiving house, the justice shall call in the superintendent, and may, if he thinks fit, call in any other medical practitioner, and after investigation order the alleged lunatic to be detained in the receiving house. The detention order only remains in force for six weeks; extensions not exceeding three weeks at a time may be made by a justice if thought necessary. During his detention in a receiving house the patient will not be designated a lunatic or a pauper. At any time during the period of detention the medical superintendent, if he thinks the patient should be removed to an asylum, may bring the patient before a justice with a view to the ordinary reception order being made.

The advantage of the proposed scheme, continues the committee, will be apparent. The alleged lunatic, directly he enters the receiving house, will be under the care of medical men who have specialised in mental disease. The most experienced alienists are of opinion that the increase of insanity which has been apparent in London during recent years can only be limited by the proper early treatment of cases. Such treatment would be provided in receiving houses, and thus, without doubt many persons who are sent at present from the workhouses to asylums would not need to go to asylums at all, but would improve and recover at the receiving houses. In connexion with these there could be, if required, an out-patient department which would enable persons who needed it to obtain advice. Thus it is believed that many cases of incipient mental disease might be arrested, and the need for long seclusion in an asylum avoided. The Bill proposes that the certification of lunatics for detention in an asylum should be placed in the hands of the medical officers attached to receiving houses, and in this it coincides with the spirit of the recommendations of the Royal Commission. There would be discrimination as to the necessary treatment and classification of each patient, and thus only persons who required detention in an asylum would be sent there. The Bill proposes also to obtain power for the provision of ambulance stations and ambulances which would enable lunatics to be brought to the receiving house and to be transferred to the asylums with proper care and attention. There would be considerable economy in this, as at present each union makes its own arrangements for the removal of lunatics, and at times the arrangements leave much to be desired.

The committee thinks the special circumstances of London call for immediate action, and, as it seems improbable that the Government will introduce early legislation on the lines of the report of the Royal Commission, it holds that the County Council should itself make a move in the matter. When the question of providing receiving houses was before the Council in 1899 it was suggested that four should be established, each to accommodate 250 patients, the approximate expenditure being £500,000. The committee had subjected this scheme to severe pruning, and now proposed the establishment of two receiving houses, each for 250 patients, one on the north and one on the south of the Thames. By utilising part of the site being purchased for a mental hospital under the terms of Dr. Henry Maudsley's gift, the committee thinks the total cost of the scheme should not exceed £150,000 to £180,000.

The finance committee in a report on the financial aspects of the proposal points out that there would be a saving to the ratepayers because (1) the early treatment of incipient mental cases would minimise the increase of insanity; (2) the certification of patients would be done mainly by the medical officers of receiving houses without extra fee; (3) the conveyance of patients from the receiving houses to the asylums would be more economical than their conveyance from 29 different unions. The cost falling upon the Council would be (1) capital cost of buildings; (2) repair of buildings; (3) possible cost of maintenance of out-patients' department; and (4) pensions of staff. As regards maintenance of patients, this would be recovered from the guardians, but the cost in the receiving houses might be more than in the workhouses or infirmaries.

The finance committee goes on to say that in its opinion the arguments which had been adduced by the asylums committee in support of its proposals are such as to warrant the Council in obtaining Parliamentary powers to establish as an experiment *one* receiving house. It appeared to the finance committee inexpedient and unnecessary to obtain any further powers at present. In the event of one receiving house being established and proving a success, there would be no difficulty in obtaining additional powers. The committee is prepared to support the proposal if its scope is limited in this direction. By proceeding in a tentative and cautious manner the Council would avoid the danger of anticipating Government action upon the report of the Royal Commission. The committee adds, in conclusion, that the possibility of establishing the receiving house on the site of the proposed mental hospital influenced it greatly in coming to its decision, as it seemed to point to the possibility of trying an important experiment on a comparatively small scale.

The report will be considered by the County Council next week.

THE
TWELFTH INTERNATIONAL CONGRESS ON ALCOHOLISM.

The Twelfth International Congress on Alcoholism, of which the Duke of Connaught is the honorary President, was opened on July 19th, when the acting President, Lord Weardale, delivered an inaugural address at Kensington town-hall. This is the first time that the Congress has met in London, and the delegates representing 16 foreign Governments, the self-governing and Crown colonies, and protectorates received a cordial welcome from their colleagues in this country.

The temperance societies in the United Kingdom were well represented, and on behalf of the British Government departments there were present Mr. W. P. Byrne, C.B., Assistant Under-Secretary of State, representing the Home Office; Mr. H. B. Simpson, C.B.; Mr. J. Pedder; Mr. G. A. Aitkin; Dr. H. B. Donkin, Commissioner of Prisons; Dr. R. W. Branthwaite, inspector under the Inebriates Acts; Sir Robert Baxter Llewelyn, K.C.M.G., representing the Colonial Office; Dr. Arthur Newsholme, chief medical officer, and Dr. Arthur Downes, senior medical Poor-law inspector, representing the Local Government Board; and Dr. Janet Campbell and Dr. Alfred Eichholz, representing the Board of Education.

Lord Weardale said that he took the chair in the unavoidable absence of the honorary President, whose keen interest in the cause of temperance was well known and appreciated by all present. The temperance question was a vital one to humanity, and it was one in which a large amount of educative work had yet to be done. The earliest of these congresses was only held in 1885, and this was the first time that the Congress had held its proceedings in London, but national education was bringing to the rising generation a consciousness of the evils of alcoholism that would bear good fruit. To his mind the most important question was the relation of the drink habit to the welfare of the child, while he was glad that something had already been done by means of legislation to protect children from the influence of alcohol. This was a matter which would receive the attention of the Congress, while among other important questions to be discussed when dealing with the prevention of alcoholism was the medical side of the matter. On this important contributions to their deliberations would be made.

Dr. von Strauss und Torney, President of the Senate of the Supreme Administrative Court of Berlin, said that he had been asked by Herr von Bethmann-Hollweg, the Chancellor of the German Empire, to express on his behalf his appreciation of the high aims which animated the Congress. The most important purpose in life was the promotion of the economic welfare of nations, and the principal obstacle to the attainment of that end was the abuse of spirituous liquors. Obviously the same means could not be used by all nations to bring about the desired end, but the proceedings of the Congress should have the effect of making the nations understand better the difficulties under which each had to work in order to do away with the evils consequent upon the abuse of alcohol.

The Rev. N. C. DALHOFF (Copenhagen) said that in Denmark the use of light beers was increasing and the use of beers of heavy alcoholic strength was decreasing. Denmark was living down the reputation of being a brandy-drinking country.

Dr. RAGNAR VOGT (Christiania) remarked that in his country the consumption of alcohol had been brought down to about a fourth of what it used to be during the past half century.

The Hon. G. F. COTTERILL (Washington) said that as long ago as 1812 a temperance organisation was formed in America, and that the United States had never recognised any vested rights in the drink traffic.

Sir JOHN COCKBURN and others having addressed the Congress, it was announced that the Queen of Holland had invited the next Congress to meet at the Hague in 1911.

In the afternoon the exhibition was formally opened by the Dean of Hereford. The exhibition illustrates the machinery of temperance work in various parts of the world. It includes literature, diagrams, lantern slides, photographs, models, chemical apparatus, regalia, postcards, medals, and a variety of objects of interest to the temperance reformer generally.

In the evening Mr. Lewis Harcourt, M.P. (First Commissioner of Works), held on behalf of the Government a reception for delegates in the Imperial Institute. Invitations were issued to more than 2000 guests. Those present included the Crown Prince of Sweden, the Swedish Minister, Lord Weardale, Lord and Lady Carlisle, Lord Saye and Sele, Field-Marshal Sir George White, the Dean of Hereford, the Hon. Mrs. Leigh, Sir John Kennaway, M.P., Sir F. Hodgson, the Hon. J. H. Turner, Sir T. Glen-Coats, M.P., Sir J. Batty Tuke, M.P., Professor G. Sims Woodhead, Lady Horsley, Dr. Clifford, Mr. Leif Jones, M.P., Surgeon-General G. J. H. Evatt, the Bishop of Croydon, Sir Percy Bunting, Canon Hicks, Sir T. P. Whittaker, M.P., Sir H. Hesketh Bell, Surgeon-General Pleadwell, Mr. C. H. Roberts, M.P., Lady Cecilia Roberts, Mr. J. S. Higham, M.P., Mr. W. McAdam Eccles, Sir E. Stafford Howard, the Archdeacon of London, Sir John Cockburn, Major Lugard, Dr. C. F. Harford, Colonel L. G. Fawkes, Colonel G. H. Bolland, and Mr. Mark H. Judge.

The real work of the Congress commenced on the morning of July 20th at the Kensington Town-hall, when papers were read on Juvenile Temperance, by Miss CORA STODDARD (Boston, U.S.A.); on Temperance Education in the School in Various Lands, by Herr J. GONSER (Berlin); and on Temperance Effort in Juvenile Societies throughout the World, by Madam ALLI TRYGG-HELENIUS (Helsingfors).

Miss Stoddart contended that if the child were instructed in temperance principles moral and spiritual ideals would be strengthened, but that such instruction must be begun early. Herr Gonser's paper was an optimistic plea for the continuance of temperance teaching, while the paper of Madam Trygg-Helenius was descriptive of the various juvenile temperance leagues. In the discussion which followed the reading of these papers emphasis was laid upon the importance of the personal factor of the teacher; it was upon this that the value of instruction in temperance principles, dietetic principles, and hygiene depended. As to the relative advantage of relying, in connexion with thorough instruction in temperance principles, upon personal conviction among the teachers, opinion seemed to be divided, many holding that legislative action would be more generally effective than private sentiment.

After the midday adjournment the conference met at the conference room of the Imperial Institute under the presidency of Mr. J. BYSTROM (Stockholm), when papers were read on Temperance Teaching in Higher Schools, by Miss A. W. RICHARDSON (London); on How to reach the Student Class, by Mr. IVAR THULIN (Stockholm); and on How to Educate the Teachers, by Herr J. PETERSEN (Kiel) and M. AUBERT (Paris).

In the afternoon a reception was held at the London Temperance Hospital by the British Medical Temperance Association, when the guests were received by Professor Sims Woodhead and Sir T. Vezey Strong.

Dr. A. HOLITSCHER (Carlsbad) read a report on Alcohol in Lobar Pneumonia and Enteric, founded on statistics from 47 hospitals, in 18 of which the plan of alternating treatment had been adopted. The purpose of this plan was to secure the most reliable proof as to the effect of alcoholic and non-alcoholic treatment. Among 238 cases of pneumonia treated with alcohol the death-rate had been 24·3 per cent.; among 248 cases treated without alcohol it had been 21·3 per cent. Of 47 cases complicated with delirium tremens, alcohol had been prescribed in 21, of which 15 ended fatally, while of the 26 patients treated without alcohol only nine died. While alcohol could not be made responsible for the difference between the 24·3 and 21·3 percentages owing to the smallness of the number of patients reported on, he thought the investigation demonstrated the complete failure of alcohol as a curative agent in such cases. Of the 161 typhoid patients reported on by eight institutions, 80 had been treated with alcohol, of whom 15 died, and 81 without alcohol, of whom 12 died.

Professor SIMS WOODHEAD said that the majority of medical men who had investigated the subject had arrived at the conclusion that it was necessary to revise their opinions as to the value of alcohol as a therapeutic agent. While admitting that sufficient evidence could not at present be obtained to put the case convincingly before the public, it was a fact that medical opinion was tending towards that which was held by those who discarded alcohol.

In the evening the Norman Kerr lecture was delivered by Professor TAAV. LAITINEN (Helsingfors) in the theatre of the Victoria and Albert Museum, the subject being the Influence of Alcohol on Immunity. The lecture was well attended, and was found by the audience to be both instructive and suggestive. It is referred to at some length in a leading article this week.

At the third general meeting, which was held in the Kensington Town-hall on July 21st, Dr. IMRE DOCZI read a paper on Alcohol and its Effects on the Child; Professor HERCOD took for his subject the Legal Protection of Children; and Mrs. BRAMWELL BOOTH spoke on Alcohol in its Relation to the Home. The Scientific Section continued its work and in the evening a public demonstration was held in the Queen's Hall, the LORD CHIEF JUSTICE presiding. The Congress will close on Saturday, July 24th, with a farewell *déjeûner* to the foreign guests.

(To be continued.)

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 23rd, 1831.

USE OF HUMAN FAT

IN THE ARTS, ITS ECONOMICAL APPLICATION TO THE PURPOSES OF FUEL AND FOR FEEDING VARIEGATED LAMPS.

(Extracted from the Annales d'Hygiène Publique, &c.)

AT this period, 1813, a circumstance occurred in Paris, which, by its singularity and the importance attached to it by the government, deserves to be recorded. The servants of one of the anatomical theatres having been informed against for trafficking in human fat, were watched for some days by the spies of the police, and were shortly detected in the fact. The affair appeared sufficiently serious to be laid before the minister of general police. In the report drawn up on the subject, it was viewed in a moral and medico-political light, and the principle was laid down, that this fat, proceeding from bodies deceased in the hospitals, might propagate diseases, and even compromise the lives of those who touched it. It was proved on the investigation of the affair, that there existed amongst the servants of the Faculty of Medicine, and of the private theatres, a kind of association for the purpose of trading in this material; that the fat not previously melted was used to grease the wheels of their waggons—that *several quacks purchased it as a remedy in painful diseases;* but it was especially consumed, and in enormous quantities, by the enamellers and false-gem makers, who bought it under the name of dogs or horse fat. Two thousand pounds of weight were found in the dwelling of one of the servants of the School of Medicine, 20 lbs. with another, 400 kilogrammes with a third, and two barrels full were seized with a fourth. A waggon drawn by two horses, and assisted by three porters, was required to draw this enormous quantity of fat to the Montfaucon sewer, into which it was projected.

In order that no public alarm should be created, or any popular commotion excited, the affair was tried with closed doors, and the culprits sent to the Bicetre for six months. In the different interrogations to which they were subjected, they confessed that they had repeatedly sold the fat at seventeen sous the pound, and that they found it a source of much emolument. It is, indeed, surprising that the government did not obtain earlier information on this matter, for the servants made no mystery about it, and they rendered the fat publicly in the anatomical theatres. On the marriage of Napoleon with Maria Louisa, we saw them prepare with this fat, solidified with some tallow, considerable quantities of flambeaux and lamps, which they sold to the neighbouring spice-men, and which were used for the illumination at the Faculty of Medicine and the Palace of the Luxembourgh.

THE INTERNATIONAL CONGRESS OF NURSES.

A NURSING Congress, convened by the International Council of Nurses, is at present proceeding. The International Council, founded by Mrs. Bedford Fenwick ten years ago, now consists of the National Councils of Nurses of seven affiliated countries—Great Britain and Ireland, America, Germany, Holland, Finland, Denmark, and Canada. This is the second quinquennial meeting of the Council, which has now agreed to hold its meetings every three instead of five years. There have, however, been two interim congresses, one in Paris two years ago and one in Buffalo in 1901. It has been arranged to hold the next meeting in Cologne in 1912, and Fraulein Agnes Karll, President of the German Nurses' Association, has been elected President of the International Council in place of the retiring president, Mrs. Fenwick. As stated in the "Foreword" issued by the honorary secretary, Miss L. L. Dock, "the essential idea for which the Council stands is self-government of nurses, with the aim of raising ever higher the standards of education and professional ethics, public usefulness, and civic spirit of their members."

The scope of the present Congress includes such subjects as Education and Registration, the Nurse in Private Practice, the Nurse as Citizen, the Relations of Nursing and Medicine, the Care of the Insane, the Nurse as Patriot, Morality in Relation to Health, and the Nurse in the Mission Field. Under these headings are classed the various branches of each subject, including School Nursing, Social Service Work, Nursing in Prisons, Massage, Professional Organisation, and Scientific Temperance.

Among those contributing papers to the Conference are Mr. Haldane, the Secretary of State for War; Miss Stewart, matron of St. Bartholomew's Hospital; Fraulein Agnes Karll; M. Mesureur, of the Assistance Publique, Paris; Dr. Anna Hamilton, of the Protestant Hospital, Bordeaux; Mr. D'Arcy Power; Dr. Frederick Rose, assistant medical adviser to the London County Council; Dr. Robert Sevestre, of the Leicester Infirmary; Dr. Robert Jones; and Dr. William Russell, medical inspector of the State Commission in Lunacy, New York.

Besides the affiliated councils, delegates have been sent from France, Italy, Sweden, Belgium, Switzerland, Japan, and Syria, so that the Congress may rightly be deemed an international one, and presents to the public a valuable accumulation of information respecting the progress of nursing and the condition of organisation of nurses in many parts of the world.

The meetings are being held in the Church House and Caxton Hall, where there is also a Nursing Exhibition. The chief features of interest here are the practical exhibits of nurses, organised by the various nurses' leagues and associations. One table is devoted entirely to dressings and appliances used in nursing injuries and diseases of the head, and contains exhibits from ophthalmic, throat, and ear hospitals. There is a well-equipped district nursing section, showing every kind of cheaply constructed emergency appliances, while some amusing models of cottages and rooms depict nursing in the days of Mrs. Gamp and in the hands of the Queen's nurse, the district patient before and after the advent of the nurse, and a typical Irish cabin.

There has been no lack of hospitality to vary the work of the conferences, and besides expeditions, banquets, and other entertainments organised by the honorary officers of the Council, the Congress was invited to receptions at Dorchester House by Mrs. Whitelaw Reid and at the Mansion House. For the visit to Windsor, arranged for Saturday, the King has sent instructions that special facilities be given to the visitors, and the Canadian delegates have received permission from His Majesty to lay a wreath on the tomb of the late Queen Victoria.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8268 births and 3637 deaths were registered during the week ending July 17th. The annual rate of mortality in these towns, which had declined in the five preceding weeks from 12·6 to 11·8 per 1000, further declined to 11·5 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 14·0 per 1000, against 14·9 and 13·7 in the corresponding quarters of 1907 and 1908; the mean rate in London during last quarter did not exceed 13·5, against 14·0 and 12·7 in the two preceding corresponding quarters. The lowest recorded annual death-rates last week in the 76 towns were 4·9 in Willesden, 5·6 in Rotherham, and 5·7 in Walthamstow and in King's Norton; the rates in the other towns ranged upwards, however, to 18·2 in Coventry, 19·5 in Warrington, 20·3 in Middlesbrough, and 21·5 in Great Yarmouth. In London the recorded death-rate last week did not exceed 10·6, and was considerably lower than in any previous week of this year. The 3637 deaths from all causes in the 76 towns last week showed a further decrease of 74 from the declining numbers in recent weeks, and included 324 which were referred to the principal epidemic diseases, against 321 and 341 in the two preceding weeks; of these 324 deaths, 114 resulted from measles, 67 from diarrhœa, 56 from whooping-cough, 35 from diphtheria, 30 from scarlet fever, and 22 from "fever" (principally enteric), but not one from small-pox. The 324 deaths from these epidemic diseases last week were equal to an annual rate of 1·0 per 1000, against 1·0 and 1·1 in the two previous weeks. No death from any of these epidemic diseases was registered last week in Birkenhead, Derby, Stockport, St. Helens, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 4·5 in Wolverhampton, 4·6 in Coventry, 4·7 in Newport, and 5·9 in West Bromwich. The fatal cases of measles in the 76 towns, which had been 159, 129, and 138 in the three preceding weeks, declined to 114 in the week under notice; the highest annual death-rates last week from this disease were 2·5 in Norwich, 3·0 in Wolverhampton, 3·3 in Newport (Mon.), and 4·4 in West Bromwich. The 67 deaths attributed to diarrhœa showed a further slight increase upon the numbers returned in recent weeks, and caused the highest proportional fatality in Aston Manor, Rhondda, and Bolton. The 56 deaths from whooping-cough showed a further decline from recent weekly numbers, but caused annual death-rates equal to 1·6 in Swansea and 2·0 in Great Yarmouth. The 35 deaths assigned to diphtheria somewhat exceeded the numbers in recent weeks, and included five in Manchester and Salford, and three each in Birmingham, Hull, and Newcastle-on-Tyne. The 30 fatal cases of scarlet fever were fewer by nine than those in the previous week, and included five in Manchester and Salford and three in Blackburn. The 22 deaths referred to "fever" exceeded the low number in the previous week by 13; they included six in Manchester and Salford and three in Blackburn. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily increased in the six preceding weeks from 2228 to 2647, had further risen to 2737 on Saturday last; 415 new cases of this disease were admitted to these hospitals during last week, against 390 and 371 in the two preceding weeks. The registered deaths in London last week referred to pneumonia and other diseases of the respiratory organs, which had been 158 and 154 in the two previous weeks, further declined last week to 106, and were 21 below the corrected average number in the corresponding week of the five years 1904–08. The deaths in London last week included but three which were directly referred to influenza, against 13, 11, and seven in the three preceding weeks. The causes of 28, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during last week were again duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Salford, Nottingham, and in 51 smaller towns; the 28 uncertified causes of death in the 76 towns included five in Birmingham, and two each in London, Bootle, Warrington, Tynemouth, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 944 births and 448 deaths were registered during the week ending July 17th. The annual rate of mortality in these towns, which had been equal to 13·3 and 12·9 per 1000 in the two preceding weeks, further declined to 12·5 in the week under notice. During the 13 weeks of last quarter the death-rate in these Scotch towns averaged 16·0 per 1000, while in the 76 large English towns the mean death-rate during the same period did not exceed 14·0. The death-rates last week in these Scotch towns ranged from 10·3 and 11·4 in Leith and Glasgow, to 15·6 in Perth and 18·8 in Dundee. The 448 deaths in the eight towns last week showed a further decline of 14 from the numbers in the two preceding weeks, and included 40 which were referred to the principal epidemic diseases, against 54, 37, and 36 in the three preceding weeks. These 40 deaths were equal to an annual rate of 1·1 per 1000, against 1·0 in each of the two previous weeks; the rate last week from the same epidemic diseases in the 76 large English towns did not exceed 1·0 per 1000. Of the 40 deaths last week from these epidemic diseases in the Scotch towns, 16 resulted from whooping-cough, 11 from diarrhœa, six from diphtheria, three from "fever," and two each from measles and scarlet fever, but not one from small-pox. The 16 fatal cases of whooping-cough showed an increase of four upon the number in the previous week, and included six in Glasgow and three each in Edinburgh, Dundee, and Aberdeen. The 11 deaths attributed to diarrhœa were fewer by one than those in the previous week; four occurred in Glasgow and two both in Edinburgh and in Dundee. The six deaths from diphtheria exceeded the numbers in either of [illegible] week, and included one each in Edinburgh and Paisley. The two deaths from scarlet fever were returned in Glasgow and Edinburgh. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 71 and 61 in the two preceding weeks, further declined to 56 in the week under notice, and were seven below the number in the corresponding week of last year. The deaths in the eight towns last week included 20 which were referred to different forms of violence, including 11 in Glasgow and three in Edinburgh. The causes of 24, or 5·4 per cent., of the deaths in the eight towns last week were uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 19·6, 18·5, and 15·6 per 1000 in the three preceding weeks, rose again to 16·9 in the week ending July 17th. During the 13 weeks of last quarter the death-rate in the city averaged 20·9 per 1000, whereas the mean rate during the same period did not exceed 13·9 in London and 15·8 in Edinburgh. The 129 deaths of Dublin residents from all causes registered last week showed an increase of 10 upon the number returned in the previous week, and included 11 which were referred to the principal epidemic diseases, against 13 and three in the two preceding weeks. These 11 deaths were equal to an annual rate of 1·4 per 1000, the death-rate from the same epidemic diseases last week being equal to 1·0 in London and in Edinburgh. Of the 11 deaths from these epidemic diseases in Dublin last week, five resulted from diarrhœa, three from diphtheria, two from measles, and one from "fever," but not one either from scarlet fever, whooping-cough, or small-pox. The fatal cases both of diarrhœa and of diphtheria showed an increase upon recent weekly numbers. The 129 deaths at all ages included 24 of infants under one year of age and 31 of persons aged upwards of 60 years; these numbers scarcely differed from those in the previous week. Three inquest cases and four deaths from violence were registered during the week; and 53, or 41·1 per cent., of the deaths occurred in public institutions. The causes of two, or 1·5 per cent., of the deaths in the city last week were not certified either by a registered medical practitioner or by a coroner; in London the causes of all but two of the 979 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was equal to 4·6 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel George E. Weston retires on retired pay (dated July 17th, 1909).

Lieutenant-Colonel William B. Day, from the Half-pay List, is restored to the establishment with precedence next below P. C. H. Gordon (dated July 1st, 1909).

The undermentioned Lieutenants to be Captains (dated March 1st, 1909):—James S. Dunne and Arthur D. O'Carroll.

Lieutenant Gilbert G. Collet, from the Seconded List, is restored to the establishment (dated July 17th, 1909).

Captain Travis C Lucas is seconded for service on the Staff of the Governor of Bombay (dated August 1st, 1908).

Lieutenant-Colonel M. W. Russell has been appointed Staff Officer to Principal Medical Officer, Eastern Command, vice Lieutenant-Colonel C R. Tyrrell, who has been appointed Administrative Medical Officer, Bordon District.

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of the following officers of the Indian Medical Service:— Lieutenant-Colonel Henry George Luther Wortabet (dated June 22nd, 1909). Lieutenant-Colonel Alexander Silcock (dated March 25th, 1909) Lieutenant-Colonel Arthur Gervase Hendley (dated June 25th, 1909).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Supplementary List, Lieutenant Denis Murphy to be Captain (dated July 4th, 1909).

TERRITORIAL FORCE.

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance: The promotion to the rank of Lieutenant-Colonel of Major (Honorary Major in the Army) Charles Stonham, C.M.G., bears date April 1st, 1908.

1st South Midland Mounted Brigade Field Ambulance: Captain William H. Stephen to be Major (dated June 21st, 1909).

2nd Highland Field Ambulance: Lieutenant John Innes to be Captain (dated June 2nd, 1909).

1st London (City of London) Field Ambulance:—The undermentioned officers to be Captians: Lieutenant Percival G. A. Bott (dated April 30th, 1909), and Lieutenant Andrew Elliot (dated June 17th, 1908).

3rd Lowland Field Ambulance: William Kelman Macdonald to be Lieutenant (to be supernumerary) (dated April 1st, 1909).

3rd Wessex Field Ambulance: Lieutenant-Colonel Harry

M. Brownfield resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated June 5th, 1909). Edmund Alderson to be Lieutenant (dated June 16th, 1909).

For Attachment to Units other than Medical Units.—Samuel Ryder Russell Matthews to be Lieutenant (dated May 1st, 1909). Albert Alexander Gunn to be Lieutenant (dated June 16th, 1909). Thomas Nash Thomas to be Lieutenant (dated June 17th, 1909).

VOLUNTEERS.

1st Cadet Battalion, The Manchester Regiment: Surgeon-Major Israel J. E. Renshaw resigns his commission (dated May 29th, 1909).

TEMPERANCE IN THE ARMY.

The annual report of the Royal Army Temperance Association for 1908-09 is excellent reading. It is the twentieth of its kind, and it contains a record of progress which has absolutely no drawbacks. In 1889 there were only 12,120 members of the association, which the Rev. J. Gelson Gregson had originally founded; now there are 30,614, the increase in the past two years alone having been 4704. Taking the normal strength of the British garrison in India as about 72,000, the proportion of temperance men is very high indeed, and there are signs that these numbers will continue to rise. In fact, there is reason to hope that in a few years' time one-half of the soldiers in British units will have become voluntary total abstainers. As the late secretary, the Rev. J. H. Bateson, happily puts it: "The association has become an army within an army—an army that is always absolutely sober." The effect of abstinence on the health and physique of men serving in a tropical climate need scarcely be dwelt upon; and there is also the higher moral tone which comes when the soldier leads a steady sober life. The support given to the association by the higher military authorities and regimental officers has been naturally of the warmest kind, and among the rank and file the old prejudice against the teetotalers has long since died out. The attractions offered in the matter of membership are such as are best calculated to win intemperate men from their demoralising habit, and to confirm the abstainer in his intention to keep the pledge that he has taken. The young soldier in particular, who is open to many temptations on arrival in India, benefits greatly by the operations of the association, and the State is the gainer by the sobriety which now reigns almost supreme throughout the cantonments of the country. Mr. Bateson has just retired from the secretaryship of the Royal Army Temperance Association after 20 years of unselfish labour, and he leaves to his successor an admirable organisation which cannot fail to endure. He carries with him the gratitude of many thousands of men who have reason to be thankful for all his efforts in the cause of army temperance.

Correspondence.

"Audi alteram partem."

MALTA FEVER ON THE RIVIERA.

To the Editor of THE LANCET.

SIR,—In the interest of those who may visit the Riviera next season it is, I think, desirable that the facts of the following case should be made known.

This year a gentleman, who was previously in good health, stayed for six weeks at one of the most frequented health resorts (?) there. He lived the ordinary life of a visitor, spent a good deal of time on the golf links, and returned to London on Easter Monday. For some days before starting for home he had been feeling unwell in the evenings, but neither then nor immediately after his return was the exact nature of his ailment recognised. As soon as it was found that he had a rise of temperature in the evening it was decided to have his blood tested for the reaction given by the organism of Malta fever. The result was "positive," and has since been frequently confirmed, and he has been in bed and seriously ill for 12 weeks suffering from that disease. This case is, in my experience, unique, but I am far from suggesting that it is the first of the kind. Probably if attention is called to it others will be reported and the true nature of many obscure illnesses which have followed a visit to the Riviera will be recognised. Malta fever is known to have a wide geographical distribution, but that an ordinary visitor to the Riviera runs a risk of acquiring the disease has not, I think, hitherto been appreciated. Possibly, in some quarters it will not be so even now. Sir Alfred Keogh has kindly furnished me with the following.

Return showing the Number of Admissions to Hospital for Malta Fever amongst the Troops Serving in Malta.

Year.	Number admitted.	Remarks.
1904	320	—
1905	643	—
1906	119	From Jan. 1st to June 30th.
1906	42	From July 1st to Dec. 31st.
1907	11	—
1908	4	—
1909	0	From Jan. 1st to June 24th.

The discovery that infection was chiefly conveyed by goats' milk was made in June, 1906. Is it possible that the goat owners of Malta, finding that there is no longer a sufficient demand for the milk of their infected herds, have shipped them off to the towns on the Mediterranean coast?

In the official statistics of Malta it appears that among the "exports of local produce as reported by shipping agents" there were in 1906-07: "sheep and goats," 764; in 1907-08, 778; the proportion of goats is not given. Of the goats examined by the Commission 50 per cent. were found to be affected by the disease, and 10 per cent. were actually excreting the micrococcus in their milk. That the export of infected goats is a source of danger is shown by the case of the s.s. *Joshua Nicholson*. In 1905 this steamer shipped 65 goats at Malta for export to the United States of America. Their milk was drunk by the captain and many of the crew, the result being that an outbreak of Malta fever occurred on board the vessel, almost all who drank the milk being affected. When the goats reached America they were placed in quarantine, but that they were still infective was proved by the fact that a woman who drank their milk acquired the disease.

It would be interesting to know the number and destination of the goats exported from Malta since July, 1906. I commend this inquiry to the government of that island.

I have no personal experience of the taste of goats' milk in tea or coffee, but it is said by some to be unpleasant; if so, it is probably but little used in the hotels on the Riviera.

The occurrence of the organism of Malta fever in cows has been observed in a considerable number of instances. Have the cows on the Riviera become infected?

In the process of making cream cheese nothing, so far as I am aware, is done to ensure that the milk is sterile, and failing that cream cheese made from goats' milk must be regarded as capable of conveying infection; in this case, indeed, it appears to have been its probable source.

It is, I submit, incumbent upon the sanitary authorities of the towns of the Riviera to at once institute an investigation into the bacteriological purity of the supply of the cows' milk, goats' milk, butter, and cream cheese, and until this has been done and the question herein raised has been satisfactorily settled it will be well for visitors to the Continent in search of health either to avoid the Riviera or to be well assured that at the hotels at which they may reside all possible precautions have been taken to protect them from Malta fever.

I am, Sir, yours faithfully,

July 20th, 1909. J. K. FOWLER.

THE NATIONAL LIBRARY OF WALES.

To the Editor of THE LANCET.

SIR,—Speaking from the presidential chair of the National Eisteddfod at the Albert Hall, London, on June 16th last, the Prime Minister, referring to the National Library of Wales, said: "That National Library will, I trust, become the centre, the home, the gathering and the training ground of Celtic scholarship in this country in the years that are before us. It already possesses, either actually or in promise, some of the most valuable manuscripts and books which it is possible to accumulate for those who desire to explore the antiquities of Celtic literature and Celtic history." The Prime Minister went on to point out that it was a patriotic duty to assist the National Library and the National Museum by "adding to the treasures of which these great national institutions are to be the storehouse."

The National Library of Wales was founded by Royal Charter granted by H.M. the King in 1907, and entered upon the first stage of its existence on Jan. 1st of the present year in a temporary building at Aberystwyth, a building admirably adapted for the storing and cataloguing of the collections pending the removal to the permanent building which will be erected on a magnificent site of four acres close to the town of Aberystwyth, generously given for the purpose by the Right Hon. Baron Rendel. A large number of valuable gifts of books, manuscripts, prints, and drawings has already been made to form the nucleus of the library, which at this moment contains the finest collection of Welsh MSS. in existence, including the famous Hengwrt and Peniarth MSS.; the collection of MSS. and early Welsh books made by Moses Williams, afterwards the property of the Earls of Macclesfield; and a number of MSS. derived from other collections. The Hengwrt Library includes not only the oldest texts of Romance literature, but also one of the most valuable MSS. of Chaucer's "Canterbury Tales" and other MSS. of great importance. The number of printed books already in the library is nearly 50,000. We need, however, very many books in Celtic literature and, even more, works of general reference, standard books in English and other languages, sets of transactions of literary, historical, and scientific societies, sets of the great periodicals, dictionaries, encyclopædias, and many other books of various kinds which we have no funds to acquire.

The Charter provides for the circulation of duplicate books for educational and research purposes, and this will be an important feature of the work of the library. The case of Wales is exceptional. Its University consists of three national colleges situated at Aberystwyth, Bangor, and Cardiff, while there are other important centres of educational activity, all urgently in need of the aid which it is hoped the National Library will be able to give to the higher branches of study. I wish particularly to state that while the Celtic side of the library must be its strongest feature, yet the object for which it was founded is much wider. It is to be a national library in the best sense, designed to afford in Wales that opportunity and encouragement for study and research hitherto wanting, and the lack of which has placed Wales at a disadvantage as compared with the other divisions of the United Kingdom and with other countries. England, Scotland, and Ireland enjoy great privileges under the Copyright Act which Wales has not received, and can hardly now expect to receive. Three libraries in England and one each in Scotland and Ireland are entitled to one free copy of every book published in the British Islands, while five or six other libraries which formerly had the same privilege now receive an annual grant from the public funds in lieu of it.

It is contemplated to proceed, as soon as circumstances will permit, with the erection of permanent buildings, and plans have been provisionally adopted. A sum of £21,000 has been subscribed towards the building fund. To erect a suitable and The contributors rts of Wales and Monmouthshire, and many residing in London and elsewhere, including Welshmen abroad. The fund is a truly national one, and is made up of sums ranging from £5000 to 3*d*. The quarrymen of Festiniog and neighbourhood, for instance, made up a list of 744 names for a contribution of £70 18*s*., while the teachers of Cardiganshire agreed to make up £100. In Carmarthen, Swansea, Cardigan, Aberayron, and other centres, large and small, committees were formed to collect subscriptions. The contributors to the fund fully represent the Welsh people and their enthusiasm for the National Library is clearly shown. The library has also received gifts from kindred institutions. The British Museum, the Library of Congress at Washington, the Smithsonian Institution, the Corporation of London, the John Rylands Library, Manchester, the National Library of Ireland, and the principal public libraries have each sent sets of their publications, while the University of Oxford has made a grant of publications of the Clarendon Press. Several eminent scholars at home and abroad have also sent gifts of books, in many cases spontaneously, and with a graciousness which greatly enhances the value of their gifts.

The library is managed by a court of governors and a council, to which bodies members are nominated by H.M. Privy Council, by the county and borough councils of Wales and Monmouthshire, the University of Wales, and the three University Colleges. The maintenance is provided by a grant in aid from H.M. Treasury, which at present only provides for bare working expenses. No sum for purchasing the large number of necessary books is at present available.

I venture to ask those of your readers who feel an interest in this effort to bring within the reach of the residents in Wales the advantages which a National Library offers to make gifts of books or money for the book fund and donations to the building fund.

Communications may be addressed to me at the National Library, Aberystwyth.

I am, Sir, yours faithfully,
JOHN WILLIAMS, President.
Plâs, Llanstephan, Carmarthen, July 12th, 1909.

METHODS OF BARBARISM IN ITALIAN HOSPITALS.

To the Editor of THE LANCET.

SIR,—The two events denounced in your columns under this title by a correspondent in Rome as having taken place in our hospitals—namely, the expulsion of a doctor from one of them on account of "moral turpitude" and of a sister from the other—are unfortunately true, but they took place with an interval of several years between them and have obviously been brought together in order to disparage our hospital institutions. I may add that the guilty persons received prompt and exemplary punishment. The other *irregularities*, of which, according to your correspondent, the two facts mentioned serve as a small demonstration, are not known to us, and we invite him to expound them in detail and to report concrete facts. Thirdly, the neglect of dying people on the part of sisters and nurses has never been shown to exist either in the Policlinico or in the other Roman hospitals. Fourthly, the confidence of the Roman public in the Policlinico and the other hospitals not only is not shaken but is steadily increasing, as is shown by the constantly rising number of patients and the fact that among these are many belonging to the leisured classes. Fifthly, our medical *personnel* is not inferior to that of other hospitals in other countries, and if the actual staff of assistants has not so far attained perfection, still, it has not all the faults attributed to it by your correspondent, while it is undeniable that it is improving steadily owing to carefully considered recruiting and a wider development of nursing schools. So much for the sake of truth. Then, as regards the close of your correspondent's letter, up to the present time we are really quite unaware of having any Anglo-American protectorate over our hospitals. The Roman hospitals live on their own incomes and on direct subsidies from the State, therefore if there is a limit to Anglo-American loyalty and liberality it is no concern of ours. In the hope that you will publish these few remarks of mine in your widely-read paper,

I am, Sir, yours faithfully,
Professor AGOSTINO CARDUCI,
President, &c.
Rome.

⁂ We publish this letter with pleasure, but it seems to have escaped Professor Carduci's attention that our correspondent was quoting the Italian journals, and gives the reference to much of what he reports as appearing in the *Tribuna*.—ED. L.

THE PROPOSED LEGISLATION IN REGARD TO ANÆSTHETICS.

To the Editor of THE LANCET.

SIR,—The present situation with regard to this question requires the careful attention of the medical profession, and the remarks which follow have no relation whatever to the practice of anæsthetics as a specialty, but apply to the general practitioner of medicine in all parts of the kingdom. Dr. F. W. Hewitt has undertaken a most important work in bringing forward a measure to ensure protection to the public from the risks of general anæsthetics in the hands of persons who have not received a complete medical training. His proposals have been opposed by a portion of the dental profession partly on the ground that a very large number of medical practitioners are ignorant of the details and methods necessary for producing efficient anæsthesia for operations in the dental chair. In this statement they are perfectly correct, and this state of affairs has been due to the apathy and supineness of the medical student, who during his curriculum despises the idea of learning practical means of earning a livelihood from a secret conviction that he personally will be wafted into a consultant's chair where kneeling princes will pray for his advice. It is, however, absolutely essential that he should learn to give nitrous oxide and ether in the dental department of his hospital, so that he may become an efficient coadjutor of the neighbouring dental surgeon in that general practice which will have to support him and his family during his working life.

At the present moment, when the dental profession are making some claim to be more familiar with the use of nitrous oxide gas than the medical man, unless the latter opens his eyes to the fact that, by reason of his medical knowledge and training, he is the only proper person to induce and conduct general anæsthesia in all circumstances and decides at once to attend a dental hospital or department to obtain a proper facility with the apparatus and in the procedures involved, he will find during the next decade that a serious rivalry in this respect has been established and that he has cast away a valuable means of livelihood which is not only his birthright but a duty which he owes to the public who become his patients.

A medical practitioner is in a false position who, for no other reason than a want of activity in learning how to control the gas or vapour for the purpose in hand, stands by while his patient is subjected to the action of drugs which are potent enough to cause insensibility at the hands of others whose knowledge of medicine and therapeutics is less than his own.

Surely, if he thinks he is the proper person to be sent for to apply means of resuscitation in case of accident during anæsthesia he should be still more the fit person to prevent the accident from arising. It should be his task to choose the most suitable anæsthetic according to the opinion he forms of the patient's state of health, to produce complete anæsthesia, to discriminate during his administration of this anæsthetic between respiratory and circulatory symptoms, and to apply himself the remedial measures as required.

It is to be hoped that the teachers of anæsthetic administration in the hospitals of this kingdom will see to it that their pupils before qualification can properly administer nitrous oxide and ether for dental operations, and that the general practitioners will bestir themselves so that their present inefficiency in this respect may recede into the past.

I am, Sir, yours faithfully,
H. BELLAMY GARDNER,
Formerly Instructor in Anæsthetics at Charing Cross Hospital.
Harley-street, W., July 19th, 1909.

A SYSTEM OF DIET AND DIETETICS.

To the Editor of THE LANCET.

SIR,—Surely Dr. Young labours his points in endeavouring to support his statement that my views on the Salisbury diet are "incomplete and erroneous." As I pointed out in my previous letter, Salisbury sometimes prescribed 8 ounces a meal at the beginning of treatment; a statement made in my critic's first letter which contradicts his assertion that the "vital" error in my article has reference to quantity. Dr. Young, also, for the sake of his thesis, divided the food into three meals a day, although he complains that I did not refer to the number of meals, and regards that as a "fairly weighty error of omission." Now he assumes I have forgotten that Salisbury repeatedly emphasised that "five hours must elapse between meals." There is nothing in the original article which justifies either of these assumptions, and reference to it will show that the five hours' interval is mentioned in the statement that the water should be given at 6 and 11 A.M. and 4 and 9 P.M., and one or two hours before meals. Surely the reader can understand from those words that either three or four meals can be given and that even under a four meal *régime* the last one need not be later than 10 P.M. Talking of midnight, as Dr. Young does, as the time when the fourth meal would be partaken of, is an exaggeration. The diet received adequate notice, and the idea in Dr. Young's mind that the quantity and number of the meals are the "prominent essentials" obscures the wood by the trees. The essential feature of the diet is that it is one of meat and hot water only. Further I may point out that the strain on the kidneys and organs concerned in the metabolism of protein was not ignored. Surely Dr. Young will not maintain that if only one or two ounces are given for a meal a five hours interval is essential. Many cases do quite well on four-hourly feeds. These are what I call the minutiæ of treatment, the modifications required by the individual patient. I have no reluctance in admitting that 11 ounces, or even 8 ounces, is an unduly large quantity for some cases at the beginning of treatment, but even Dr. Young cannot get away from the fact that Salisbury sometimes prescribed 8 ounces and that in the course of treatment patients sometimes take more.

I am, Sir, yours faithfully,
EDMUND CAUTLEY.
Upper Brook-street, W., July 19th, 1909.

MEDICAL TOPICS AND THE PUBLIC PRESS.

To the Editor of THE LANCET.

SIR,—I am sorry to trespass again upon your space. The Editor of the *Practitioner* is of opinion that in my brief letter to you last week I have not cleared him from a suspicion of having sanctioned the republication of parts of my article in his July number. I am certainly pleased to do so, and to be assured that he had no responsibility in the matter. His permission was not sought.

I am, Sir, yours faithfully,
July 19th, 1909. DYCE DUCKWORTH.

DISUSED INSTRUMENTS AND MEDICAL CURIOS.

To the Editor of THE LANCET.

SIR,—The Medical Missions Committee of the Society for the Propagation of the Gospel are very grateful to an anonymous donor for a case of surgical instruments. They are always very thankful for such gifts for use in mission hospitals and dispensaries abroad or for the equipment of recently qualified doctors about to proceed to mission stations.

They would also, for exhibition purposes, be very grateful for gifts of *native* medicines, charms, or other articles used in the treatment of disease, the stock-in-trade of a Chinese doctor or chemist, or the dress, &c., of an African witch doctor. The object of showing these or similar articles at exhibitions is to contrast the apathetic indifference to human suffering, the heartless and stupid neglect of the sick, or the horrible cruelty to which they are subjected in lands where non-Christian beliefs hold sway, with the work of the medical (Christian) missionary, to whom all life is sacred, and who without distinction of class or creed ministers with loving skill to all alike. Gifts of such articles, accompanied by a brief description of their character and purpose, should be sent, with the name and address of the donor, to the Medical Missions Department, S.P.G. House, 15 Tufton-street, Westminster, London, S.W.

I am, Sir, yours faithfully,
E. H. MOSSE,
Chairman of the Medical Missions Committee, S.P.G.
July 20th, 1909.

THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—I have read with interest the paper by Dr. Hewitt and Dr. Blumfeld, and also the correspondence following. After the publication of Dr. Hewitt's lectures on General Surgical Anæsthesia in your columns in July, 1907, I tried the C_2E_3 mixture on the open mask and my results corresponded to those described. But I returned to what we call at the Bristol Royal Infirmary the "two-bottle method," the two anæsthetics (chloroform and ether) being in separate bottles and added to the mask as required, as I think it is an improvement on the use of one definite mixture.

By this method the amount of either anæsthetic can be altered at will, an enormous advantage in combating shock. For example, take a case where this "two-bottle" method is used. The anæsthetist sees that the next step of the operation is calculated to produce shock. He is able by adding more ether to his mask to anticipate the surgeon, stimulate his patient, raise his blood pressure, and place him in a position to better resist the effects of the coming manipulation. In this way more ether than required is never used; the type of anæsthesia is excellent; respiration, pulse, and colour remain good; and the amount of anæsthetic used very small, in my experience less than with the mixture.

I should have been glad if Dr. Hewitt and Dr. Blumfeld had given more particulars with regard to the use they make of oxygen, the only reference being in connexion with a case suffering from pneumonia. My own experience leads me to think that, when a patient is very ill and feeble at the time of operation, oxygen used in conjunction with the above method is a very valuable factor in the prevention of shock.

I am, Sir, yours faithfully,
Clifton, Bristol, July 19th, 1909. STUART V. STOCK.

THE ASSOCIATION OF MEDICAL DIPLOMATES OF SCOTLAND AND A MEMBERSHIP QUALIFICATION.

To the Editor of THE LANCET.

SIR,—The holders of the Licentiateship of the Edinburgh Royal College of Surgeons, either alone or conjoined with the Glasgow or other Scottish qualifications, have for a long time laboured under a disadvantage in practice through not having a Membership open to them. The matter has for some years engaged the attention of the Association of Medical Diplomates of Scotland, on whose behalf I venture to ask the publication of the following communication addressed to the Edinburgh College.

I am, Sir, yours faithfully,
DAVID WALSH,
Welbeck street, W., July 21st, 1909. President, A.M.D S.

TO THE PRESIDENT AND COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

[illegible]

[illegible] l to the material

considerations set

the Association of

(Signed) [illegible]

c., Hon. Secretary.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

To the Editor of THE LANCET.

SIR,—May we bring before your readers the claims of the Factory Girls' Country Holiday Fund?

The Fund last year sent away over 5000 of the poorest women and girls of London, some of whom, even some of the youngest, work from nine to 11 hours a day, and are in many cases the chief bread-winners in their families. Many of these girls have been saving up for months for their holiday; the total contribution from them reached, last year, the sum of £1558. But it is obvious that, from wages sometimes as low as 2*s*. 6*d*. a week, the whole cost cannot possibly be paid by them. A fortnight at the country or seaside, including fare, costs on an average 25*s*., yet many factory girls cannot afford even a week, and if they could they would not know where to go. Many have never been out of London at all to stay.

To all, then, who value their annual holiday, we appeal, confident that they will not allow those who are working amid many hardships, to go on working without any change or refreshment. It has been already necessary to refuse all further applications since the end of June, and it is doubtful whether many applicants, numbering some thousands, may not after all be disappointed of their longed-for holiday unless further help be at once forthcoming.

Subscriptions and donations will be thankfully received by the chairman, the Rev. Edward Canney, St. Peter's Rectory, Saffron-hill, London, E.C., and by the honorary treasurer, Herbert Rendel, Esq., 51, Gordon-square, London, W.C.

Yours obediently,
MARY ST. HELIER, NORFOLK,
BEATRICE B. TEMPLE, HENRY SCOTT HOLLAND,
LOUISE CREIGHTON, H. ADLER (Chief Rabbi),
H. L. STEPNEY, ROBERT F. HORTON,
EDW. SOUTHWARK, FRANK LLOYD.
July 21st, 1909.

SANITATION AT SEA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

FROM EGYPT TO MARSEILLES BY THE MESSAGERIES MARITIMES.—THE BEAUTIES AND ADVANTAGES OF THE ROUTE.—OLD SHIPS WITH GOOD COMPANY AND GOOD CUISINE.—BETTER QUARTERS FOR THE CREWS.—SANITARY PROGRESS IN TONQUIN.—THE MESSAGERIES MARITIMES' MODEL LAUNDRY AT MARSEILLES.

HAVING travelled to Egypt by the Austrian-Lloyd I returned by the French Messageries Maritimes. The two companies work together and give circular tickets, so that passengers may go by the one route and return by the other. For persons who are wintering in Egypt and can afford to stop on the road I would recommend Trieste for the outward journey and Marseilles for the return. Near Marseilles there are numerous half season places where the traveller may gradually prepare for the change of climate. An economic and pleasant way home for those who like the sea would be by the General Steam Navigation Company's ships which sail twice a week from Bordeaux to Tower Bridge, London. From Marseilles to Bordeaux, Arles, Nimes, Aigues-Mortes, Montpellier, Narbonne, Carcassonne, and Toulouse can be visited. They are all on the road and but a few hours' journey from each other. Though not winter stations, still, being in the South of France, they are much warmer than Paris or London. Then by taking a route that is not so direct all the health stations of the Pyrenees can be reached; together with Pau and Biarritz. In regard to the ships from Alexandria to Marseilles, it must be confessed that these are not up to date. They are old boats, and as the agreement between the company and the French Government has now run its course and must be renewed, the building of better ships was deferred until the new arrangement should be concluded. This was all the more necessary, as there was not only the question of the contract between the Government and the company, but a new law pending on the construction of ships and the conditions of navigation. This law has now been enacted and its stipulations are such that it will place the French passenger lines in the very fore rank of progress so [illegible]

ru [illegible] courteous assistance of the company; to embark at Port Said on the *Tourane*, a ship of 6000 tons which was on her homeward journey from Japan, China, and India. To my mind the principal advantages of this line are the sociability, the cheerfulness, the ready wit, and the *savoir vivre* which so specially distinguish the French people. In Cairo I heard some English visitors complain that the discipline on the French ships was not severe enough, and that second-class passengers gained too easily and too frequently access to parts of the ship reserved for first-class passengers. But on pushing the inquiry further I found that the second-class passengers who had rendered themselves obnoxious by their loud and vulgar behaviour were Englishmen, and I can quite understand that the French officers would overlook conduct on the part of foreigners which they would never tolerate on the part of fellow-countrymen. The second great advantage of a French ship is the cuisine, while it is not necessary to pay 2*s.* or 3*s.* for a bottle of ordinary wine which only cost 2*d.* or 3*d.* For the sake of promoting temperance by encouraging the consumption of cheap natural wines instead of spirits all taxes have been abolished on ordinary wine. In France, therefore, the retail price varies from 2*d.* to 4*d.* the litre. In France or on French ships there is consequently no more reason to make a special charge for wine at meals than there is for bread, or pepper and salt.

So far as sanitation is concerned, the *Tourane* has none of the appliances found on modern ships. There is no mechanical ventilation, so that when the weather is bad the conditions below deck, especially among the third-class passengers, must be anything but pleasant. On the other hand, there is no general steerage, but cabins holding six berths with mattresses—in fact, complete beds. The sailors' quarters looked clean and airy, particularly as it was fine enough weather to keep the port-holes open. But heat came from the kitchens, which were too near, and the cooks complained of insufficient ventilation. Some of the firemen had cabins like the third-class passengers, and this is better than what I have seen on English ships. Indeed, in regard to space, bedding, and lockers, the poorest quarters seemed better than what obtains on inferior lines of passenger ships in England. Even the best British ships are only superior because they have mechanical ventilation, and not because there is more space or greater cleanliness. The Chinese and Arabs cook for themselves. The former eat no bread and only half cook their vegetables, but the French *chef* entertained a high opinion of the skill of his Chinese colleague. The crew's closets, and especially those used by the Arabs, were very clean and free from bad odour. The closets consisted of iron troughs with salt water flowing in them all the time. There was no hospital on board, but a first-class cabin with four berths was kept empty to be used as an emergency hospital, though it was not properly situated or furnished for such a purpose. There was a disinfecting stove on deck. It is used once on every journey even when there is nothing to disinfect, but simply to see that it is in good working order. But for this it might happen that when urgently wanted a screw, an indiarubber flange, or other small thing would be missing. The stove is also usually brought into operation on arriving at Suez from the East. The passengers are then asked for all their dirty body linen as a routine, so as to accustom them to the idea and to demonstrate that their linen is not injured by the process. Then when a real danger is present there is not the same resistance nor as many objections offered as there used to be when it was proposed to apply an altogether unprecedented and unknown proceeding.

During the passage I was able to obtain some interesting information from medical officers who had terminated their term of service in Tonquin. The natives, they said, were peaceful agriculturists who only desired not to be molested and to pay as few taxes as possible. They were still oppressed by the mandarins, but they knew that, at least in extreme cases, they could obtain redress by complaining to the French authorities. Consequently, there was a party among the natives that favoured the French occupation. All attempts at scientific farming, I was told, had been dismal failures. The only paying thing a European could do was to buy land and let the natives cultivate it, reserving a share of the profits; this would bring in from 10 to 20 per cent. The French have introduced the usual evils of civilisation, and the resources of the country are strained to pay pensions to those who, having served their time, will spend their money at home. On the other hand, the French have abolished plague and cholera. The natives aiding, the first cases are promptly reported, the patients and contacts are isolated, and then if there are 20 to 30 cases remaining to be dealt with they can soon be stamped out. As sanitary reformers the French have evidently done very good work in Tonquin; but I gathered that it was considered doubtful whether this colonial enterprise is, on the whole, of benefit to the natives. Further, it should be noted, and I was much impressed by the fact, that the latter observation inferred the belief that such enterprise was only justified if it did improve the condition of the natives.

The journey from Egypt to Marseilles affords opportunities of enjoying some magnificent scenery. On approaching the Straits of Messina a commanding view of Mount Etna can be obtained. Then the Straits are so narrow that Reggio and the Calabrian ranges on one side, and the thickly populated verdant mountains of Sicily on the other side, are both quite near enough for the full appreciation of their beauty. On the other hand, it needed good glasses to see the ruins caused by the recent earthquakes. A few hours later, after passing through the Straits, the ship approaches the cone-shaped volcanic mountain island of Stromboli. On the other side of the ship, also well in sight, was the rock-formed Lipari and other wild-looking, picturesque islands, celebrated for the delicious wines obtained from the grapes grown on their volcanic soil. Then on the morrow the ship sails through the Straits of Bonafacio, and here again beautiful views of the coasts of Corsica and Sardinia can be enjoyed; while, finally, the islands of Hyères, the coasts of the French Riviera, and Marseilles itself form a magnificent framework of purple mountains and white glistening towns that wall in the deep waters of the blue Mediterranean.

A very important part of the problem affecting sanitation at sea is the laundry question. An abundant supply of absolutely pure linen is an essential to health and comfort, and this the Messageries Maritimes have taken into consideration from the very beginning. So long as 47 or 48 years ago they purchased a country house surrounded by extensive grounds some three miles outside of Marseilles. It was not a question of being near the ships so as to quickly transport the linen, but of getting away from the dirty atmosphere of the town and of securing plenty of pure air and sunshine to dry the linen. Now, however, Marseilles has so grown that the estate is not so free from the soot and smoke of factories as it used to be. Nevertheless, I have not seen elsewhere and in connexion with shipping companies such extensive open-air drying grounds as those of the Messageries Maritimes laundry near the Pont du Jaret in the rue Saint Pierre. Here all the woollen blankets are dried in the open air, and this not only makes them delightfully fresh and sweet but prevents their becoming like felt, which is a very general consequence of being dried artificially. There is room for several miles of rope to be extended backwards and forwards across the grounds, and here all sorts of linen as well as the blankets can be exposed to the wind, the country air, and the sunlight. It is hardly necessary to insist on the great advantage of this simple natural method of drying. The only disadvantage is that the laundry is a long way from the docks, but a tram line passes close by and a branch line into the laundry will soon be built. Then special cars for carrying linen will be constructed, and these will run straight from the ships to the laundry and back from the laundry to the ships.

When this laundry was first installed there was no machinery and everything was done by hand, but in those days the company had only a few very small ships. In 1852 there were not more than 17 ships, with a total tonnage of 13,600; now there are 68 ships, with a total gross tonnage of 294,973. When one of the larger ships arrives from the Far East it brings some 25,000 pieces of dirty linen. At the laundry something like 3,000,000 different articles are washed during the course of the year. There are a series of large rooms to receive this linen. On one side there is the yard where the carts drive up to the doors of these rooms, and the chief steward accompanies the linen, for which he is responsible till it has been counted out. An opening in the wall of the counting-room serves to receive the linen and convey it to the laundry and a receipt is given to the chief steward; the laundry then becomes responsible. For this it is important to have separate receiving- and counting-rooms, so that no two ships' linen shall be unloaded in the one room. My ship, the *Tourane*, brought no less than 30,000 pieces to wash, and it required a good sized room to sort and count all this. [illegible] once in the hands of the laundry [illegible] to be divided into three classes—the very dirty, the dirty, and the comparatively clean. Each category is washed differently so as to avoid wearing out the cleaner pieces. There are great vats or tubs some five to six feet deep and nearly as wide, and these will hold about 700 kilos weight of linen. With the linen there is some 900 litres of washing water, and this is made to circulate slowly round and through the linen for some six hours. After that the linen can be cleaned much more easily and therefore with less wear. Otherwise the linen could at once be put into the revolving and beating drum or mechanical washers, but it would be necessary to knock the linen about for a much longer time before it would be cleaned.

Wine stains on the table linen are very frequent, and for this the *eau de Javel* so popular with the French laundress is used. It consists of a solution of chloride of lime of stable strength and easy application. After remaining half an hour in the washer where the linen is beaten amid soapsuds the hot soapy water is drained off and replaced by fresh cold water, so delivered as to allow the linen to cool gradually and thus avoid fixing the stains. Ten minutes of fresh-water rinsing follows on this gradual change. To dry the linen it is first placed in a centrifugal hydro extractor, which whirls round so rapidly as to throw the water out, and the linen is then damp but no longer wringing wet. Certain sorts of linen may then be ironed, and there are huge revolving cylindrical rollers no less than 3·50 metres long. Under these two sheets can be passed and ironed side by side. Like those employed at Liverpool in the laundry works of the Cunard Steamship Company, they are much larger than the standard size. I found that at Marseilles they had not introduced any automatic finger-guards. There was nothing to prevent the fingers of the attendants being carried under the roller and crushed. At the Cunard laundry works, as I have described,[1] there is a sort of rod in front of the ironer, and if the fingers press too far forward they will lift this rod before they reach the roller. The raising of the rod at once stops the machine and no accident can happen.

The place where the greater part of the washing is done is like a large and lofty hall with lantern openings on both sides of the roof and windows facing each other along the longitudinal walls. There is therefore plenty of air space and light. The mending rooms are also large and light, but the room for ironing by hand is not important. Machinery has almost entirely taken the place of this sort of work. There is only a little hand ironing to be done and this principally for hotels, for which establishment the company is now beginning to cater, and it will be an advantage for travellers who have to stop at Marseilles to have a sanitary laundry at their disposal.

One of the greatest difficulties in washing ships' linen is to remove rust stains. These are naturally more plentiful at sea than on land. The problem has now been solved, perhaps in a somewhat empirical manner. The rust-stained linen is soaked in a bath placed in the open air and containing a very weak solution of oxalic acid. The secret of success is to never change the water; it may be replenished, but the bath is never emptied, and it is only after it has been in use for about two months that the maximum of effectiveness is attained. Another peculiarity demonstrated by experience is that the result also depends considerably upon the weather. The rust stains disappear much more quickly when the sun shines. The mistral wind, which is not only very violent and cold but ensures the maximum of sunshine and a very dry atmosphere, is also favourable. On the other hand, dull, heavy, cloudy weather is absolutely unfavourable for the process. The rust-stained linen may then have to remain in the solution of oxalic acid all the night. This is likewise the case when the stains are very bad. Generally speaking, it suffices to lay out the linen flat in the tank and let it soak for about four hours. By that time the rust stains will have disappeared. Then the linen must soak in a soda bath for two hours so as to remove the oxalic acid and check its burning action. It will then be found that the linen has not lost any of its strength. Put to the test of a dynamometer it will not break sooner by pulling than if it had not been washed in this manner.

Apart from these ingenious devices it was a pleasure to observe the freshness, ample space, and abundance of light that prevailed throughout the premises. There was an abundance of trees, while flowers, some wild and some cultivated, disputed with the linen for a share of sunlight. The steam, the sloppy wet floor, the hot muggy atmosphere, the sour effluvia of the old-fashioned and small laundries—the characteristics that render laundry work unhealthy—are quite unknown here. The women workers are rarely ill and have no complaint to make on the score of unhealthy conditions.

CHOLERA AND PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Fresh Outbreak of Cholera in St. Petersburg.

As stated in my last letter (THE LANCET, June 26th, p. 1864) the epidemic of cholera in St. Petersburg, which began in August last, appeared to have come to an end on May 14th (27th). The respite was, however, a very short one. On May 25th (June 7th) the city was once again declared "infected." In the week ending May 30th (June 12th) there were 58 cases of the disease there with 19 deaths. Since then the returns have been as follows:—

Between May 31st and June 6th	...	202 cases,	46 deaths.
,, June 7th ,, 13th	...	548 ,,	155 ,,
,, ,, 14th ,, 20th	...	664 ,,	234 ,,

(All the dates mentioned are according to the Old Style.)

The epidemic so far has been confined to St. Petersburg itself, with the exception of a few cases imported elsewhere by persons coming from the capital. Thus in the week ending June 13th the figures include three such cases, imported respectively to Mariengam (government of St. Petersburg), and to places in the governments of Olonetz and Riazan; and in the last week of the table they include two similar cases, imported respectively to the government of Novgorod and to the town of Riga. All these imported cases have, it is said, been isolated. But the situation is unquestionably a disquieting one. Already the epidemic in the capital may be regarded as of serious proportions (though it is still far from the maximum height of last year's outbreak), and a further extension of the infection to other parts of Russia is almost inevitable. It will be fortunate, indeed, if other countries escape the disease.

In former letters I have referred more than once to the question of the St. Petersburg water-supply. It will be recalled that a Government Commission was recently appointed to study the whole question of the water-supply and drainage of the city. According to the daily papers the expense is estimated at 100,000,000 roubles (about £10,000,000), and this sum it is proposed to raise by a public loan. The works will, it is thought, take about 15 years to complete. It is obvious, therefore, that this great scheme can have no immediate effect on the present epidemic, which will have to be fought with the same inadequate weapons as in the past. But it is very satisfactory that the Russian authorities are taking a large view of their responsibilities, and are contemplating works intended to attack the evil at its root. The problem set before the Commission is, as already pointed out, a difficult one, in view of the topographical conditions at the months of the Neva, and the method by which the problem is attacked and the solution arrived at will be watched with interest by all who are called on to deal elsewhere with such large public health questions.

Plague in Adalia.

[illegible]

in [illegible]

Th[illegible]

in a mill. She had already been ill for seven days, with all the clinical symptoms of an attack of plague, the bubo being in the left groin. The case is recovering. It will be recalled that similar isolated cases of plague occurred in this town in 1905, 1906, and 1908. In last year's outbreak two cases were seen (in a flour mill) on July 26th; then on August 22nd there was a third case, followed on Sept. 5th and Sept. 23rd by two others, making five cases (with three deaths) in all. This year's case has occurred in the same quarter of the town as those of last year. The only measure put in force against Adalia has been a medical visit on departures.

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[1] See THE LANCET, Sept. 26th, 1908, p. 973

Plague near Beirût.

On July 1st a case of suspected plague was reported from a village in the Lebanon, called Harret Arik, situated about an hour away from Beirût. The patient was a boy, aged 13 years, employed in a tailor's shop in that town. On June 27th he returned to the above-named village in the evening; apparently he was already ill, and shortly presented all the symptoms of an attack of bubonic plague; in this instance also the bubo was in the left groin. A bacteriological examination was made and bacilli were found resembling those of plague. This case also appears to be recovering. As in the case of Adalia, a medical visit has been imposed upon departures from Beirût. It will be recalled that last year three sporadic cases of plague were seen in Beirût between Sept. 19th and 23rd, and that in December there were five cases of the disease in its pneumonic form at the French hospital in that city. It would seem that both here and at Adalia the infection of plague lingers on from year to year without giving rise to anything more formidable than a few sporadic cases of the disease in the human subject. As to its behaviour in rats during the intervals there is, unfortunately, no information.

Plague in Bahrein.

Since the date of my last letter the following returns have been received from Bahrein (in the Persian Gulf):—In the week ending June 3rd, four deaths; in that ending June 10th, two deaths; and in the week ending June 17th, no deaths. Finally, under the clauses of the Paris Convention Bahrein was declared free from plague on July 2nd.

Suspected Cholera on an Indian Ship.

The following remarkable series of incidents recently occurred on a British ship called the *Alavi*. This is apparently the same steamer on board of which three cholera cases occurred at the lazaret of Camaran at the end of last November. (Those cases were mentioned in a letter of mine which appeared in THE LANCET of Jan. 16th last, p. 196). Of the history of the ship between that time and the middle of May nothing is known here. On May 19th she left Calcutta with a cargo of rice and with four passengers. Between Calcutta and Aden, again, three deaths from suspected cholera occurred in members of the crew. These deaths took place respectively on May 21st, May 31st, and June 14th. The symptoms are said to have been those of cholera, and the illness lasted in each instance only one day. The ship called at Berbera and at Aden, where she arrived on June 17th. There she was regarded as "suspected"; the drinking water on board was treated with permanganate of potash and changed; the bilges were also disinfected with carbolic acid, and the crew's quarters, their clothes and effects, were all disinfected. The three patients were all stokers. The ship went on to Jeddah, where she arrived on June 22nd. There was nothing suspicious on board at the time of arrival; nevertheless, the same measures that had been applied at Aden were repeated here, and the passengers were subjected to five days' quarantine. On June 29th, that is seven days after her arrival, another member of the crew (also a stoker) fell ill with symptoms described as those of cholera, but of the "dry" form. The ship left *en contumace* for India, on July 1st, taking the patient with her. Later written reports may perhaps throw further light on this case. It is not easy to see how the diagnosis of cholera of the "dry" variety could be arrived at, in the absence of an epidemic, unless death supervened in a few hours (the so-called "fulminant" form of cholera), which apparently was not the case in the present instance, or unless there was bacteriological evidence of the nature of the illness. Apart from this, however, the occurrence of three deaths on the voyage, at the intervals named, from a rapidly fatal form of disease, resembling cholera, is noteworthy. It can scarcely be more than a coincidence that they occurred on a steamer from which, some six months previously, three cases of undoubted cholera had been isolated at the lazaret of Camaran.

Constantinople, July 12th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Afflicted Children."

ON July 10th, under the auspices of the National Special School Union, a meeting was held at which Mr. C. H. Wyatt, director of elementary education, Manchester, gave an address on the need of special schools for afflicted children. Dr. A. Brown Ritchie, chief medical officer to the Manchester education committee, who presided, said that they ought, in regard to the schools for the mentally defective, to aim at getting a higher type of the mentally defective. The lower types of the mentally defective and imbeciles were of no use in the special schools. He said there was a regrettable tendency to keep these mentally defective or very backward children year after year in the elementary schools, instead of having them sent to the special schools. Every year thus spent was the loss of a year. He advocated the teaching in these special schools of manual work. There is no doubt that many of these children, backward and unable to assimilate ordinary teaching though they may be, sometimes show remarkable aptitude in technical pursuits and the use of tools. Mr. Wyatt said that while the public conscience had felt that the blind and the deaf must be taught and trained, he regretted that the care for the mentally deficient, the crippled, and the epileptic, had not secured nearly the same hold on the public mind; hence, little had been done for them. The reason for this was want of knowledge and want of money. The latter was a real hindrance even where the authorities were anxious to do something, and he seemed to think voluntary help was needed before Parliament would be induced to move in the matter. Most members of our profession will agree with his concluding remarks: "Some of them were sure that it would be true economy to provide permanent care for all such helpless persons, seeing that nothing short of this would stop the ever-increasing number of those who, without such provision, came into the world born to a life of misery, it might be of vice, and the unfortunate producers of a miserable progeny—a real danger to national life which must be removed if they were to deal effectively with crime and pauperism."

Post-mortem Examinations.

Some of the Chorlton guardians are in an excitable mood with regard to post-mortem examinations. At a meeting held on July 9th one of them moved a resolution, proposing that the medical officers should state the name and address of any relative who assented to a post-mortem examination being made, also the ground on which the examination was considered desirable, and the conclusions drawn from the examination. These facts were to be entered in a book, which was to lie on the table at each meeting of the house committee. A lady guardian, oddly enough connected with the medical profession, seconded the resolution, and several members spoke in favour of it. Dr. J. S. Orchard, the medical officer, who has held his very responsible position for many years, had written a letter showing how two recent post-mortem examinations had furnished important information that would not have been obtained in any other way; but, in spite of this evidence, the resolution might have passed had not the mover attacked the chairman in terms which led to the breaking-up of the meeting without the resolution being put. The object of the resolution was, apparently, to throw all possible difficulties in the way of obtaining medical knowledge. Whether the question will come up again remains to be seen. It was the sequel to rather an excited meeting held in June, when there was a long discussion on the question of post-mortem examinations, arising from some remarks made by the coroner, which seem to have been hasty.

River Pollution.

With the idea that a river is intended by nature as a convenient receptacle for all the filth that can be turned into it that is held by a large percentage of the population, it is not to be wondered at that such a river as the Irwell, flowing through a populous industrial district, should give endless trouble to the authorities in spite of laws and regulations. It seems, too, a little hard that Salford should get so much of the blame for faults and failings in some measure due to the heritage it receives from the higher reaches of the river. In the days before cotton reigned supreme the Irwell must have been one of the most beautiful of our northern streams, but now, in spite of the efforts made for its purification, its colour is generally black, though sometimes it is green or yellow, according to the pollution used. Its odour is its own. It is therefore not surprising that at the last meeting of the Mersey and Irwell joint committee Mr. Scudder, the chemical adviser, submitted a report which was not altogether satisfactory. Some part of it refers to sewage effluents higher up the river and part to Salford itself. Out of 91 samples from the works of local authorities, 13 were good, 31 fair, 21 unsatisfactory, and 26 bad. At the Salford works there is an increased volume of sewage, but at the present time some of the filters are out of use and only about one-half of the dry weather sewage was being filtered. The subcommittee considered that, even with the whole of the filters in use, the filtration area was inadequate to deal with the flow of sewage. As a result of this the corporation has been asked to give an undertaking to make its filtration area adequate to deal efficiently with the whole of its sewage. To this the town clerk of Salford has replied that the question "is receiving careful consideration." An important complaint was made from the Ashton Cotton Spinners' (Employers) Association respecting the river Tame, which might perhaps give points as to pollution, even to the Irwell. It states that, owing to the very serious pollution, mill-owners who draw their feed water from the river find their pipes and valves corroded to such a degree as to cause great inconvenience, and they feared that unless the corrosion were lessened it "might lead to an accident which would create havoc to life and property in the district." The matter was referred to a subcommittee for special consideration. It is to be regretted that our rivers should become vile and disgusting nuisances.

July 20th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Health Congress.

DURING the last week a Health Congress has been in progress at Leeds organised by the city and University with the help of the Royal Sanitary Institute and the Royal Institute of Public Health, and the presence of nearly 1200 delegates has ensured the success of the gathering. On the evening of July 17th the Lord Mayor of Leeds, Alderman F. J. Kitson, and the Lady Mayoress, received the delegates at the University, and Colonel T. W. Harding, President of the Congress, delivered his presidential address, in the course of which, whilst acknowledging the advantages of modern sanitary science, he doubted whether we were healthier than our fathers, seeing that we had lost much of their simple, rational, and natural way of life. He pointed out that formerly three-quarters of the population dwelt in the country and one-quarter in the towns, but that now this ratio was more than reversed. He referred to the reduction in the mortality from phthisis, but deplored the number of deaths that it still causes. In discussing the declining birth-rate he found some comfort in the reduction of the number of early improvident marriages. He finished his address by a warm approval of physical exercises and training in schools and looked forward to the day of universal military service as one that would bring great benefit to the public health.

The work of the Congress was opened on July 19th. The Lord Mayor of Leeds presided over the session of municipal representatives and described some of the improvements that his corporation has effected in the slum areas of the city. Mr. Percy Robinson read a paper on Town-planning, in which he suggested the formation of advisory expert committees to assist municipalities in that branch of their work. Alderman H. W. Newton read a paper on Labour Colonies, and Councillor F. Anderson one on the Children Act. Sir James Crichton-Browne, vice-President of the Congress, presided over another section, which discussed "Present School Methods in Home Life," after which papers on education were contributed by Miss Hitching, Mr. D. O. Holme, and others. Dr. J. R. Kaye read a paper on "Ameliorative Measures Indicated by School Medical Inspection." Open-air schools came in for discussion, and Sir Charles A. Cameron of Dublin maintained that the meteorological conditions in Ireland were against their adoption. He urged strongly the need for medical inspection of school children in that country. On the following day Dr. Arthur Newsholme gave an address on Preventive Medicine, in the course of which he discussed alcoholism and the spread of enteric fever by shell-fish. Dr. E. F. Trevelyan spoke on the prevention of tuberculosis. The first paper in the Section for Child Study was by Mrs. H. Fisher, who discussed the value of voluntary effort in reducing infant mortality.

Degree Ceremonial at the University.

In connexion with the Congress a congregation of the University was held on July 19th, presided over by the Vice-Chancellor, for the purpose of conferring honorary degrees on Colonel T. W. Harding, Sir James Crichton-Browne, and Major Ronald Ross. Colonel Harding was presented by Professor Phillips in the following eloquent words :—

> I present to you for the degree of Doctor of Laws the President of the Health Congress now being [illegible] he has purchased with a great [illegible] Harding is a man so urbane tha[illegible] *urbanus* does not become *rustic*[illegible] amoenum habet. It is difficult, [illegible] a few sentences the public record of one who has ever had a broad [illegible] been a chief case of municipal government. Honoured by the King, by the corporation of this city and of the borough of Cambridge, he now is to be admitted by you as a graduate of the University of whose council he is already a member.

Professor A. S. Grünbaum, Dean of the Faculty of Medicine, then presented Sir James Crichton-Browne and Professor Ronald Ross. For the first he claimed the position of a pioneer in the treatment of the insane, saying that at the time when, now more than 40 years ago, Sir James Crichton-Browne initiated at the celebrated West Riding Asylum the systematic study of the pathology of insanity and of its therapeutic treatment such methods were unknown, the resulting conspicuous successes and discoveries being evidence of the efficiency of his youthful directorate during ten years. The stimulus to microscopical research, to [illegible] cerebral localisation, arose, he considered, with Sir James Crichton-Browne, while as one of the original editors of *Brain* his articles were distinguished by an admirable delineation of clinical histories and pathological findings in unique and truthful word-painting. Of Major Ronald Ross, Professor Grünbaum said : "Few of us realise that in India alone nearly five million lives are the annual tribute exacted by malarial fever. The task undertaken by Major Ross 15 years ago was therefore no mean one—to discover how malaria passed from man to man and how it might be stopped. The mere systematic examination of the whole of many hundreds of mosquitoes in itself is no small feat; to do so fruitlessly and in the face of long-drawn disappointment, yet with intuitive hope, patience, and consciousness of ultimate success, are characteristics of the true investigator, found only in those pioneers of knowledge of whom each century produces but a handful." Professor Grünbaum concluded his oration with some graceful remarks upon Major Ross's literary achievements.

July 20th.

WEST LONDON POST-GRADUATE COLLEGE.—Dr. Reginald Morton has been appointed lecturer on radiology at this college. The general vacation course will commence on Monday, August 9th, at the West London Hospital, Hammersmith-road, W.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Chair of Surgery in the University of Edinburgh.

THE election to this important chair was made this week, when Mr. H. Alexis Thomson, assistant surgeon to the Royal Infirmary, surgeon to the Deaconess Hospital, and lecturer in surgery in the School of Medicine, was appointed professor of surgery in the University of Edinburgh. The appointment, as invariably occurs in these circumstances, was the subject of a very keen competition for the support of the curators.

The Women Students of Medicine in Edinburgh.

The students of the Edinburgh School of Medicine for Women gave an At Home some evenings ago to meet and say good-bye to "the finals"—that is, to the students who had finished the final examination. There was a large and a gay gathering of the students and their friends. The lecturers of the school were also represented. The gathering was held in the Women Students' Union. The toast of "The Finals" was proposed by the Dean of the Women's School, Dr. William Russell, and was responded to by Miss Mary Low, M.A., who receives her medical degree at the graduation ceremonial on July 23rd.

Graduation Ceremony at the University of Glasgow.

The summer graduation in Medicine at the University of Glasgow took place last week. The Vice-Chancellor, Sir Donald MacAlister, presided, and conferred degrees in medicine on 73 graduates, of whom two were recipients of the degree of M.D. At the close of the ceremony Professor John Cleland, who is about to retire from his chair, delivered his valedictory address. In the course of his address, which dealt largely with the relation of environment and heredity, he took occasion to refer to the vexed question of vivisection. He pointed out that the physician's and surgeon's art is indeed a noble profession, but only when ennobled by nobility of purpose. Nobility of purpose was the most effective stimulant to study, as well as to the performance of the duty at the bedside, and it ennobled the whole acquisition of study of every description. Even vivisection, that bugbear of unbalanced minds and of many who love to be thought kind-hearted, and to think themselves so—vivisection was made noble by the enormous amount of suffering which it prevented, and which could only be prevented by the knowledge so gained and beyond our reach by any other means. Professor Cleland went on to say that he had noticed in his friends who were obliged to resort to vivisection that they had a most praiseworthy fondness not only for man but also for bird and beast. They loved not bird and beast the less, but man more than their detractors practically did. Vivisection was a work to be pursued in the teeth of inclination for attainment of purposes of the highest order. The control of inclination and the subjection of it to preference of a higher end was not only necessary for such repulsive work, but was essential for the attainment of excellence of any description. No more obviously pleasurable occupation could be imagined than that of the artist, and yet the artist who allowed himself to be the slave of his humours and his moods would never attain an enviable success. In the case of the medical profession how much more obvious it was that natural inclinations should be under complete control. No weakness was allowable in practice; its effects might amount to a crime at the expense of the patient. He pointed out here to those who had just graduated that not only had they had already to do many things with equanimity which were repulsive to their natural feelings, but while it would be their duty to cultivate all kindness to the sufferers who might come under their care and toward their friends, still they would always have to be on their guard to repress the desire to please, and to be firm in decisions which might appear to them even hard and cruel. He went on to say that errors of all sorts might arise where there was neither ignorance nor unworthy inclination, simply from want of strength of purpose. Here an element of uncontrollable circumstance came in. Resolution was a quality which, like every other feature, was largely dependent on heredity, and heredity was not of our own making. It was an "unearned increment." Our power over our will was limited, and there was truth in the remark of Spinoza that we say that our will is free when we fail to discern the factors which are acting on it. But for all that we had some such power, and, like every other faculty, the power was increased by exercise.

Death of Mr. William Whitelaw, M.D. Glasg., F.F.P.S. Glasg., D.P.H.

Dr. William Whitelaw, medical officer of health of Kirkintilloch, died suddenly at Crieff Hydropathic Establishment on July 20th. For some years he had been subject to heart trouble, and had gone to Crieff for a rest and change. Dr. Whitelaw was a native of the burgh, where he was born 73 years ago. He was a Fellow of the Faculty of Physicians and Surgeons of Glasgow and a Diplomate in Public Health. He held the position of health officer since 1877 and was also visiting physician at Broomhill and Lenzie Convalescent Homes.

The Opening of the Argyllshire Sanatorium.

This institution, a gift to the County of Argyll from Mr. and Mrs. Tom Bullough of Fasnacloich, was formally opened at Oban on July 13th. The sanatorium is situated on the summit of a hill just behind the town of Oban. The ground on which the buildings stand was formerly a residential property consisting of about nine acres of land surrounding a moderate-sized house. The grounds are beautifully laid out with walks, drives, and shrubberies. They contain a good deal of well-grown timber, mostly coniferous, and are surrounded by pine woods. Magnificent views are obtained at different parts of the enclosure, views of mountain and loch characteristically West Highland. The former dwelling-house has been utilised as an administrative block, and in addition to providing accommodation for the matron and staff has dining rooms for the use of patients. Accommodation for the patients is provided in three single-storeyed blocks, the largest of which is of the well-known "butterfly" design, but with this innovation, the roof is flat, accessible by means of a wide staircase, and at each extremity of the tricorn platform there is a shelter for the use of patients, where, screened from the wind, they can bask in the sun when it is too near the horizon to strike the lower parts of the building. Another block, situated between the last and the administrative buildings, is to be used for any patients that it may be thought advisable to segregate. The third block contains a row of single-bedded rooms opening into a substantial verandah, which runs the whole length of the building. This is to be reserved for paying patients. All the buildings are elegant in design, but there has been no undue extravagance in their construction. The entire cost of the ground, buildings, furnishings, and appliances has been borne by the donors, so that it is no small gift that the public have received. The sanatorium is to be rate-supported, and the beds, with the exception of those set apart for paying patients, have been allocated to the various local authorities in the county who have agreed to contribute to the standing charges. A large number of guests were invited to the opening ceremony. Maclachlan of Maclachlan presided, and was accompanied on the platform by Mr. and Mrs. Macdougall of Gallanach, Provost Maclachlan of Oban, Dr. R. W. Philip of Edinburgh, Dr. W. Leslie Mackenzie of the Scottish Local Government Board, Mr. Neil Gillies the architect, and others. After a few preliminary remarks by the chairman, a silver key was handed to Mrs. Macdougall, who then declared the sanatorium open. Pulmonary consumption is very prevalent in the West Highlands, having been apparently imported within comparatively recent times from Lowland towns. Probably there is no part of Great Britain more favourable for combating this scourge by natural and easily applied methods, so that Argyllshire is to be congratulated on having been enabled to take a definite step in the war against tuberculosis in very favourable circumstances.

July 21st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Insanity in Ireland.

THE gist of the fifty-eighth report of the Inspectors of Lunatics in Ireland may be summed up in two paragraphs:

(1) the number of the insane under care in Ireland has increased from 250 per 100,000 of the population in 1880 to 547 per 100,000 in 1908; and (2) the total number under care in January, 1909, was 23,931, as against 23,718 on the previous Jan. 1st. A comparative study of Irish lunacy statistics shows that for the past 18 years the number of lunatics in proportion to the population has increased by over 50 per cent., while for the past few years there is a lowering in the rate of increase. The average rate of increase for the entire period from 1880 to 1908 was over 10 per cent., while for the past three years it was only 5 per cent. The actual increase in 1908 was 213 cases, and in 1907 it was 164, but it must be clearly understood that the 213 additional cases in 1908 do not represent an actual increase, as the numerical increase is mainly the result of transfers to asylums of the inmates of imbecile wards of workhouses. One point has also to be noted, and that is that the figures with regard to the insane in asylums come short of the entire insane population of the country in respect of the fact that they do not include those who reside in their own houses or with relatives or are wandering at large. It is calculated that if by a general census of the entire population a trustworthy estimate of the insane in these classes was formed, it would amount to 15 per cent. of the total. When, however, all allowances have been made, the fact remains that there has been a marked increase in the number of the insane in Ireland.

Hospitals' Tuberculosis Committee.

At a special meeting of the committee held on July 16th, Sir John W. Moore being in the chair, the Countess of Aberdeen stated that recently in Canada and the United States she had had the opportunity of meeting a number of workers in the anti-tuberculosis campaign which was being carried on so actively in America. She had been invited to address several meetings in New York, Boston, and Detroit, with the special object of describing how the crusade was being conducted in Ireland under the auspices of the Women's National Health Association. Great interest was manifested in the movement, and the result has been the formation of committees in the cities above mentioned for the purpose of arousing sympathy amongst American citizens of Irish parentage and of obtaining their practical coöperation in assisting the work in Ireland. As a result Mr. Robert Collier had already promised Lady Aberdeen £1000 per annum for five years, with the object of equipping and starting a tuberculosis dispensary in the city of Dublin in memory of his late father, Mr. P. J. Collier, and to be called after him. It was agreed by the committee that the Dublin hospitals should be communicated with, with the object of obtaining their coöperation in the work of the proposed tuberculosis dispensary.

Inspection of South Dublin Dairies.

At the fortnightly meeting of the South Dublin rural district council, which was held on July 14th, a report was submitted by Mr. James D. Richardson, M.R.C.V.S., veterinary dairy inspector, who stated that he had inspected the cattle-sheds and dairies in the district during the months of April, May, and June, 1909, and had found all the cattle in the district healthy, and a great improvement in cleanliness. The ventilation in several of the sheds had been greatly improved, and the limewashing had been done in some cases since the cattle went to grass. Better attention had been paid to removing the manure. He had given instructions for some of the sheds to be raised where air-space was not sufficient and where overcrowding had taken place, and for imperfect drainage to be rectified. The report was marked "satisfactory," which we may certainly consider it to be.

The Pollution of Belfast Lough.

It is announced that the Royal Commission on Sewage Disposal has undertaken to investigate thoroughly the difficult sewage problem in Belfast, and that the Commissioners will pay a preliminary visit to that city next week for the purpose of making certain observations and arranging the lines on which their subsequent investigations will proceed. They will deal with the *ulva latissima* growth which causes the foul smell on the foreshores of Belfast Lough, and other matters concerning the state of the lough. At the present time, when the wind blows from the lough inwards on the land on either side a horrible smell arises, and silver articles in neighbouring houses are blackened by the sulphuretted hydrogen emitted by this seaweed. It is merely playing with the question to advise, as has been done, the removal of this plant; what is wanted is the removal or special treatment of the sewage on which it feeds and grows. At the present time Belfast Lough is a vast open sewer, receiving the sewage from a city with a population of over 370,000 people, only a mere fraction of this vast sewage material being in any way treated.

July 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Operations on Diabetic Patients.

QUESTIONS connected with the performance of operations on diabetic patients recently engaged the attention of the Society of Paris Surgeons. M. Ozenne said that in a case of urgency he would operate on a diabetic patient even though there was a prospect of a fatal termination, but he would decline to interfere if there was no urgency, because it was impossible to foresee subsequent developments. It had been recommended that a diabetic patient should be kept under treatment for some time and that an operation should be performed where there were signs of improved health; there was some justification for this, but it was nevertheless known that operation wounds might aggravate the disease and the results could not be predicted. M. Verchère said that urgency was an essential condition for the performance of an operation on a diabetic patient. The causes of the severe symptoms which such patients might display after an operation were unknown. In the case of a man suffering from diabetes and gangrenous phlegmon of the scrotum an incision was made with the thermo-cautery at noon and he was dead in the evening, although his previous general condition had not led to any expectation of such a result. M. Verchère then quoted other cases of a like kind in support of his opinion. M. Paul Delbet said that he had operated on six patients with four recoveries. Speaking generally, he considered that operations might be performed on diabetic patients who bore up well under the disease, but not on those who were cachectic. He preferred general anæsthesia to local or spinal anæsthesia.

A Medical Lawsuit.

A Madame Koenig has sued Dr. Doyen in the Seine Tribunal for 30,000 francs damages on the plea that he operated on her unskilfully for spasmodic torticollis. The court accepted the expert evidence of Dr. Berger and Dr. Monod, and non-suited the plaintiff on the ground that Dr. Doyen had performed a proper operation.

Early Hydrarthrosis in Phlegmasia Alba Dolens.

At a meeting of the Obstetrical Society held on July 1st M. Brindeau said that hydrarthrosis of the knee, which was a common symptom of phlegmasia alba dolens, might appear at an earlier stage than usual and might then form an important diagnostic feature before the occurrence of the obvious signs of phlegmasia. He reported three cases in which the women complained only of pain in the groin and the calf of the leg; there was at that time neither œdema nor any indication of phlebitis, but the presence of hydrarthrosis led to the diagnosis of phlegmasia, the symptoms of which manifested themselves subsequently.

Faulty Positions in Articular Tuberculosis.

At a meeting of the Society of Paris Surgeons held on July 2nd M. Dupuy de Frenelle drew attention to the relation which abnormal positions of the limbs due to muscular contraction might have to Poncet's tuberculous rheumatism. He said th[illegible] a whole class of cases of subacu[illegible]lve the diagnosis of white [illegible] train in the adult. M. Judet said that in the absence of any disorder of the nervous system permanent muscular contraction taking effect either at the knee or at the hip-joint seemed in the child to be in relation with chronic arthritis which was almost always tuberculous; in the adult the question was more complex, and the observed cases of dry arthritis which have secondarily developed into white swelling seemed to support Poncet's ideas.

Remote Effect of an Operation for Spina Bifida.

At a meeting of the Surgical Society held on July 7th M. Walther showed a male patient upon whom he had four hours after birth operated for spina bifida in the region of the sacrum. The patient, who was now 18 years of age, physically well developed and very intelligent, had until two years ago suffered from incontinence of urine and fæces, but the incontinence of fæces then came to an end. At present M. Walther was endeavouring to train the young man to control his bladder, for he believed that the condition was really a pseudo-incontinence due to inattention (*incontinence par paresse*). The muscular coat of the bladder reacted very well to galvanic stimulation.

Parkinson's Disease.

At a meeting of the Neurological Society held on July 1st M. Alquier described (1) the lesions found on necropsy of five cases of Parkinson's disease (paralysis agitans); and (2) the results of parathyroid opotherapy in six cases of the same condition. The examination of the central nervous system showed the existence of small lacunæ of perivascular disintegration in the tegmentum of the bulb with a normal state of the neighbouring nucleated cells and a slight diffuse neuroglial proliferation in the bulb. The muscles exhibited atrophy and vacuolisation or fibrillar division of certain muscular bundles. Except in the case of one female patient, parathyroid opotherapy brought about a decided and durable improvement as regards the pains, sleeplessness, and rigidity.

Serum Treatment of Cerebro-spinal Meningitis.

At a meeting of the Société Médicale des Hôpitaux held on July 2nd M. Dopter of Val de Grâce, speaking on the subject of the treatment of cerebro-spinal meningitis with antimeningococcic serum, gave a *résumé* of the cases hitherto published, together with such unpublished cases as he had a knowledge of. His statistics were based on 196 cases of cerebro-spinal meningitis treated exclusively with the serum prepared by him at the Pasteur Institute. Among these 196 cases there were 31 deaths, or an aggregate mortality of 15·9 per cent., but deduction of 12 cases which were moribund when the injections were given left 184 cases with 19 deaths, or a corrected (*defalquée*) mortality of 10·3 per cent. This mortality was a remarkable contrast to that of the cases treated by the ordinary methods, the average mortality of the latter being 60 or 70 per cent. In the opinion of M. Dopter this considerable reduction of the death-rate was due to the special manner in which he immunised the horses. At the beginning of the epidemic the serum which was issued for therapeutic use was obtained by immunisation according to the German and American methods, but at a later stage he immunised his horses only with living cultures introduced into the veins. A comparison of the therapeutic activity of these two serums was altogether in favour of the new form. With the original serum an aggregate mortality of 18·18 per cent. and a corrected mortality of 11·47 per cent. were obtained, while with the new serum the corresponding figures were respectively 10·93 and 8·06 per cent. The new serum therefore appeared to be more efficacious than its predecessor.

July 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Committee on Tuberculosis.

THE German Central Committee on Tuberculosis held its annual meeting at Berlin on May 22nd, the Secretary of State for the Interior being in the chair. The report for the preceding year, which was read by Dr. Nietner of Berlin, the general secretary, stated that the committee had paid 165,000 marks (£8250) on behalf of sanatoriums and 50,000 marks (£2500) to the Robert Koch fund for the prevention of tuberculosis. During the year 52,000 patients received attention in the sanatoriums, the average duration of treatment being three months. In the spring of 1909 there were 99 public sanatoriums, 34 private sanatoriums, and 18 sanatoriums for children, in addition to 79 institutions reserved for suspected cases of tuberculosis, for scrofula, and for convalescent children. There were also 92 Walderholungsstatten, or places where the patients spend the day in the open air, returning home at night. The workmen's insurance institutions (Landesversicherungsanstalten) have up to the present time paid 83,000,000 marks (£4,150,000) for the treatment of tuberculous patients under the Workmen's Insurance Acts. Dr. Hamel presented a report on the prevalence of lupus in Germany, as shown by the collective investigation which was carried out as on Nov. 1st, 1908, at the instance of the Imperial Health Office. Some particulars relative to this investigation were given in THE LANCET of Nov. 7th, 1908, p. 1412. It was stated that 18,000 medical men, or 57 per cent. of the medical profession in Germany, had answered the questions contained in the inquiry forms; and that 11,354 cases of lupus were registered. The disease was apparently more frequent in Western and Southern Germany than in the east and north. In this respect there was a striking coincidence with the occurrence of pulmonary tuberculosis. It was found that on an average 68 per cent. of the patients belonged to the female sex, but during childhood the boys seemed to be more liable than the girls to contract the disease. Dr. Kirchner recommended that more efficacious measures should be taken against lupus. He advised that pamphlets on lupus, written in a popular style, should be distributed at the public vaccination stations and at the conscription offices, and that lectures on the subject should be delivered in the schools. He further proposed that inexpensive lodgings should be provided where patients coming from the country might reside during their treatment in town. Many of these patients did not require sanatorium accommodation, and yet it might be difficult for them to obtain rooms in ordinary hotels and boarding houses.

Health of the Navy.

The report on the health of the German navy, compiled by the medical department of the navy states that the number of sick has somewhat increased since last year, being 500 per 1000, as compared with 714·5 per 1000 in the British navy. The highest sick rate was recorded in East Africa, where 992·8 per 1000 of the men were on the sick list. The duration of treatment was on an average 18·3 days. The duration of sickness was on an average 8·5 days on board ship and 9·8 days on shore, but in the Kiautchou territory it was 15·3 days. The daily number of patients was 23·4 per 1000 on board ship and 28·9 per 1000 on shore. Of the recruits, 934 men—i.e., 23 per 1000 of the naval force—had to be discharged from the service at once, the majority of them for cardiac diseases. After a longer time of training 172 men—i.e., 4 per 1000—had to be discharged chiefly on account of diseases of the eyes, mental diseases, and cardiac diseases; 99 men were discharged as partially invalided, and 406 as completely invalided. Diseases of the heart and lungs continued to be the most frequent cause of invaliding, although the percentage of cardiac diseases had undergone a considerable diminution. Whilst in 1895 there were 5 per 1000 discharged from the service for cardiac diseases, this number had decreased to 2·46 during last year. There were 65 deaths, giving a mortality of 1·5 per 1000. These deaths included ten from tuberculosis, seven from septicæmia, five from appendicitis, and three each from scarlet fever, enteric fever, insolation, and malignant tumour respectively; there were 14 cases of suicide, three of them among officers.

Bilharzia Disease.

At a meeting of the Medical Society Dr. Pfister of Cairo and Dr. Goebel of Breslau communicated a paper on the Bilharzia Disease, which is so prevalent in Egypt. Dr. Pfister showed specimens of the parasite distomum hæmatobium. Dr. Goebel said that the disease was caused by the deposition of the eggs of the parasite within the vessels of the mucous membranes of the bladder, the intestine, and the female genital organs. In the bladder they caused cystitis with proliferation of epithelium. One case of polypus and a few cases of cancer and cancroids were observed in association with the disease. The infarction of the urethra produced by the eggs caused stricture with consecutive fistula of the urethra and swelling of the scrotum and the *perineum having the appearance of elephantiasis.* The same condition might be found within the ureter and the pelvis of the kidney. The prevalence of calculus in Egypt was also to some extent caused by this parasite. In the intestine the eggs deposited in the submucous tissue produced enteritis, polypi, and infiltrations of the mesocolon; in the vulva and vagina they caused sclerosis. The eggs might also be conveyed by the blood into the liver, the lungs, the spleen, the pancreas, and other viscera, and by the lymph-*stream into the mesenteric glands. In the discussion* Professor Orth showed microscopical specimens of a similar parasite prevalent in Japan, the schistosomum Japanicum, which was conveyed through the portal vein to the intestines, the lungs, and the brain.

July 19th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Professor Carlo Ruata.

BEARING a name long and honourably known to readers of THE LANCET, Dr. Ruata has just received from his students in the University of Perugia an attestation of their indebtedness to him as professor of materia medica—a post which he has held with steadily enhanced distinction for 25 years. At a jubilee meeting convened *ad hoc*, at which the Rector of the University, Professor Icilio Tarducci, who holds the chair of the Institutes of Roman Law, Dr. Giuseppe Bellucci, professor of chemistry and Dean of the Medical Faculty, and the President of the Umbrian Pharmaceutical Association represented the Senatus, the Medical Faculty, and the profession, two of the leading students, Signor Rosanna and Signor Peiro, opened the proceedings with an address, followed by the presentation of a beautifully illuminated parchment and a gold medal in testimony of the esteem and affection of pupils past and present. Other speeches ensued, the spokesmen being the Rector, the Dean of Faculty, and the Pharmaceutical President above named. Professor Ruata made a touching and effective reply, inspiring the audience (which included many of the non-academic public) with the hope that he will live to celebrate his golden jubilee in the seat of learning which, thanks to him and his colleagues, maintains so worthily the best traditions of the Umbrian school.

President Taft and the Italian Red Cross.

Another interesting acknowledgment of good service vouchsafed is that of the Croce Rossa Italiana, which has bestowed on the President of the United States its gold medal, with diploma of honour, in testimony of the prompt and effective assistance rendered in the Siculo-Calabrian cataclysm by the American Red Cross, over which Mr. Taft presides. The President, accepting these testimonials in the name of the American Red Cross, dwells not only on their artistic beauty but still more on the proof they afford of the humanitarian spirit which makes the "whole world kin" in presence of a dire calamity. In organisation and practical working both associations have not a little to learn from each other, while in the spirit that animates them and in the alacrity with which they set themselves to their humanitarian task they are honourably identical.

The Immoral Press.

The extent to which "the great sin of great cities" is impairing the virility of the Italian youth—shown, *inter alia*, in the physical degeneration that causes 40 per cent. of rejections at each periodical levy for the army—has at last aroused public opinion; and a petition, signed by 40,000 ladies and presented to Parliament, marks the beginning of active measures for the repression of the obscene literature, printed and pictorial, over which children of tender years and of both sexes may be seen gloating at every street corner in the centres of population. In acknowledging receipt of the petition, Members of Parliament of every shade of party were unanimous in condemning the provocations to lust and to premature indulgence in the marital privilege held out to Italian youth. One or two ultra-liberal doctrinaires indeed raised the objection that suppression by the State of literature of any kind is an interference with "liberty of the subject"—that plea which would arrest legislation against the adulteration of food or compulsory vaccination—but these protesters were heard without sympathy or support. Meanwhile, the true remedy lies, in the last resort, with the public itself, but for whose demand the pornographic caterer would have to stop his supply. It is, indeed, an ethnological distinction between the Latin and the Teutonic races that whereas the comic literature of [illegible] in nothing else but breach of [illegible] latter finds its material in [illegible] British *Punch*, for instance, teeming with mirth-provoking incident and illustration undepraved by any *double-entendre* or lascivious suggestion such as makes the beginning, the middle, and the end of its Italian or French counterparts.

"Maxima debetur puero reverentia,"

said the great Roman satirist, anticipated in that injunction by Horace who forsaw the main cause of the decline and *fall of the Empire in the infraction of the same.*

"Fecunda culpae secula nuptias
Primum inquinavêre et genus et domos,
Hoc fonte derivata clades
In patriam populumque fluxit."

The Weather.

Among the "mirabilia" of this "mirabilis annus," not the least striking or memorable has been the caprice, the vicissitudes of the weather and the consequent harm wrought to health and to agriculture. Here in Rome we are having autumn in midsummer, the temperature oscillating between 68° and 70° F., while in the Italian Switzerland the hotels are empty, and at Vallombroso the few who have ventured to occupy them have been sending down to Florence for their winter clothing. From the Julian Venetia in the north to the Abruzzi and Calabria in the south we hear of nothing but rainfall, taking the form of snow in the uplands, or violent hail-storms, or "burrasche" (tempests), culminating in "nubifragi" (water-spouts). The damage to the crops is appalling—whole vineyards destroyed, with rivers overflowing their banks and flooding the arable lowlands. Add to this a return of earthquake shocks on the Siculo-Calabrian littoral and some notion may be formed of the misery, present and future, of our sorely visited Italy.

July 16th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Public Instruction on Medical Subjects.

THE Board of Public Instruction on Medical Subjects of the American Medical Association reports that there are many difficulties in the way of organising a system of carrying out its objects in a judicious manner. The ordinary newspaper rejects articles which it is not allowed to revise, but the revision usually results in the elimination of the useful matter or the insertion of popular fads or suggestions which render the article worthless and oftentimes harmful. The plan of procedure for the present is to limit the subjects for popular articles to a few of the most important, such as enteric fever, diphtheria, variola, dysentery, gastro-enteritis of children, ophthalmia neonatorum, malaria, meningitis, tetanus, rabies, cholera, and yellow fever. These subjects have been selected chiefly because they belong to the general infectious diseases which are more or less prevalent throughout the United States. Popular articles on these subjects will be prepared, and as each article is completed will be put in pamphlet form and kept in stock in a properly organised bureau and be available for physicians all over the country. In the event of a local epidemic at any point, as of enteric fever or other infectious disease, these pamphlets may at once be dispatched to those districts and placed in the hands of the people through the agency of physicians or other channels of distribution. The Board also created an auxiliary body consisting of one representative from each State, and each member is required to ascertain all matters in his State which are proper subjects for popular discussion, and to supervise in a general way the methods of reaching and educating the people. All articles

WILLIAM BROWN, L.R.C.P. EDIN., F.R.C.S. EDIN., M.R.C.S. ENG.

Mr. William Brown died on July 14th at Edinburgh, where he had resided since his retirement last year from the office of medical officer of health of Carlisle after holding that position for 25 years. His death will be mourned by every intelligent inhabitant of the town for which he laboured for a quarter of a century. Carlisle owes much to him for the vast improvements which have taken place in its sanitary condition during that period, and which have made the town one of the healthiest in England. Mr. Brown received his medical education at the University of Edinburgh. He came to London in the year 1872, when he became a Member of the Royal College of Surgeons of England. In 1873 he became a Licentiate of the Royal College of Physicians of Edinburgh, and in 1880 a Fellow of the Royal College of Surgeons of Edinburgh. Shortly after qualification he was appointed house surgeon at the Cumberland Infirmary and subsequently assisted his elder brother, the late Mr. Robert Brown, in private practice in Carlisle. In 1883 he was appointed medical officer of health of Carlisle, and by his influence several insanitary private slaughter-houses were abolished and a public one erected in their place. This measure, together with the abolition of old ashpits and pigsties in the town, practically resulted in the extinction of a virulent form of typhoid fever which at one time was epidemic in Carlisle. He also made some original investigations with regard to tuberculosis, and the results of these investigations were embodied in the first report of the Royal Commission on Tuberculosis in 1897, while he instituted a systematic veterinary inspection of dairy cattle. When last year he retired from his office the corporation of the town appointed him consulting medical officer of health in recognition of his past services.

Mr. Brown was keenly interested in ophthalmology and for many years maintained a private dispensary where a large number of patients suffering from diseases of the eye were treated gratuitously. In 1886 he was appointed assistant surgeon on the staff of the Cumberland Infirmary, and he was for many years honorary surgeon to the Carlisle Dispensary. He was a Fellow of the Royal Microscopical Society and a vice-president of the Carlisle Microscopical Society. In addition to the very able reports which he presented to the corporation of Carlisle as medical officer of health his contributions to medical literature included articles to medical journals on an Outbreak of Milk Typhoid in Carlisle, Human and Bovine Tuberculosis in Carlisle, and Lesions in Bovine Tuberculosis, the latter of which he contributed to the Transactions of the British Congress on Tuberculosis in 1901. Mr. Brown leaves a widow and three daughters.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Boudet, formerly professor of clinical medicine in the University of Lyons and Associate of the Paris Academy of Medicine.—Dr. Justin Steer, professor of medicine in Washington University, St. Louis.

Medical News.

UNIVERSITY OF LEEDS.—At examinations held recently the following candidates were successful in the subjects indicated:—

EXAMINATIONS FOR THE DEGREES OF M.B., CH.B.

FIRST EXAMINATION.

Par[illegible] Butler, Charles Marsh Gozney,* H[illegible] Abram Sinson,* Herman Louis T[illegible] m Wright.*

SECOND EXAMINATION.

Part I., Anatomy and Physiology.—Y. Elliott.

Part II., Materia Medica and Pharmacy.—H. Angel, J. H. Blackburn, J. Ferguson, G. W. L. Kirk, F. H. Kitson, G. P. Mellis, J. C. Metcalfe, M. Peto, J. J. Pickles, S. Samuel, H. P. Shackleton, and H. W. Symons.

FINAL EXAMINATION.

Part I., Pathology and Bacteriology, Forensic Medicine and Toxicology, and Public Health.—C. S. Brown, J. P. Brown, J. B. Fisher, W. S. Hart, H. N. Ingham, J. B. T. Keswick, H. S. Raper, B. A. Slocombe, G. V. Stockdale, and N. S. Twist.

Part II., Medicine, Surgery, Obstetrics, and Therapeutics.—J. N. L. Thaseby (first-class honours), H. L. Flint (second-class honours), R. E. Smith (second-class honours), S. M. Hepworth, and W. Shaw.

Diploma in Public Health.—W. Carnes.

DIPLOMA IN DENTAL SURGERY.

Part I., Anatomy, Physiology, and Dental Anatomy and Physiology.—H. R. Bentley and C. F. Salt.

Part II., Surgery, Dental Surgery, Pathology and Bacteriology, and Operative Dental Surgery.—C. F. Salt and F. C. Wilson.

* These students have completed the examination.

UNIVERSITY OF DURHAM.—At examinations for the degree of Bachelor of Medicine held recently, the following candidates were successful:—

FIRST EXAMINATION.

Elementary Anatomy and Biology, Chemistry, and Physics.—Eric Johnson and Lionel Everett Markham, College of Medicine, Newcastle-upon-Tyne; Roger Paul Ninnis, Guy's Hospital; and John Logan Pringle, Frank Blair Robson, James Stewart Soutter, and Gordon Stewart Woodman, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—George Albert Berkeley-Cole, Garfield Carse, Cyril Duncan, Idris David Evans, Robert Lacy Kitching, Reginald Arthur Hooper, Nora Murphy, Frederick John Nattrass, and Carinna Augusta Barry O'Neill, College of Medicine, Newcastle-upon-Tyne; Grace Winifred Pailthorpe, London School of Medicine for Women, and Evelyn Ritson, Arthur Sutcliffe, and Cedric Overton Shackleton, College of Medicine, Newcastle-upon-Tyne.

Elementary Anatomy and Biology.—Walter Lessey, Edinburgh School of Medicine; Ivan Miller Pirrie, College of Medicine, Newcastle-upon-Tyne; and Felix Stephens Rood, M.R.C.S., L.R.C.P., University College, London.

Elementary Anatomy.—George Edward Stephenson, College of Medicine, Newcastle-upon-Tyne.

SECOND EXAMINATION.

[illegible] Sarah Louisa Green, Norman Hodgson, James Kerr, Francis James Lidderdale, John George Ogle, Charles O'Hagan, Lionel Glover Pearson, Fred Phillips, B.A., Thomas Copeland Storey, Eleanor Walkinshaw, and Samuel Knibb Young, College of Medicine, Newcastle-upon-Tyne.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At recent examinations held in Glasgow the following passed their respective examinations:—

First Examination.—Roland John Croxford, Glasgow; George Alexander Grandsoult, West Indies; John Vincent Duffy, Belfast; William Cowan Holburn, Cambuslang; William Bannatyne, Glasgow; Alexander Watson, Rutherglen; Robert Clark Craig, Renfrew; and James Williamson, Paisley.

Third Examination.—Haripado Chatterjee, India; William Wood Shorten, Cork; Morris William Rees, Glasgow; Leon Galdemar, India; John Boyd Michie, Glasgow; James M'Cusker, Neilston; John Miller Chrystie, Glasgow; Robert Henry Jones, Glasgow; Mau[illegible] William Edward Hopkins, Carn[illegible]

Final [illegible] iglas, Greenock; William Edward Hopkins, Carnarvon; William John Taugher, Canada; Angus Cameron Livingston, Glasgow; James Young, Paisley; Ernest Wardman Wilbourne, Nottingham; Patrick James Taaffe, Glasgow; William Browne, Belfast; Seringapatam Narasimba Sreenivasa Aiyengar, Mysore; George Munro MacLeod, Glasgow; Erachshaw Dinshaw Shroff, Bombay; and Shivnarain Rozdon, Simla.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. H. Reichenbach of Breslau has been appointed Extraordinary Professor of Hygiene.—*Clausenburg:* Dr. Josef Imre has been appointed Professor of Ophthalmology, in succession to Dr. Hóoz.—*Freiburg:* Dr. H. Bäumler, Professor of Special Pathology and Therapeutics and Director of the Medical Clinic, is about to retire at the close of the present session.—*Giessen:* Dr. Arthur Weber, Assistant to Professor Voit, has been recognised as *privat-docent* of Medicine.—*Halle:* Dr. Richard Freund, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Professor.—*Kharkoff:* Dr. S. Grusdeff of St. Petersburg has been appointed Professor of Clinical Medicine.—*Munich:* Dr. R. Rössle, *privat-docent* of Pathological Anatomy, has been promoted to an Extraordinary Professorship.—*Strasburg:* Dr. O. Looss has been recognised as *privat-docent* of Odontology.

THE ROYAL DENTAL HOSPITAL.—The committee of management at its meeting on July 15th unanimously decided to invite Dr. Dudley W. Buxton to accept the lectureship founded to meet the regulations for future dental students by the Royal College of Surgeons of England.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on July 14th, Dr. Blandford, the President, being in the chair. 21 directors were present. The death of a member of the society was reported and seven new members were elected. The sum of £1255 was voted for paying the half yearly grants to the 48 widows and 13 orphans on the books of the society The widow of one of the members applied for relief, her husband, owing to ill health, having been unable to make any provision for his widow; a grant at the rate of £50 per annum was voted The society only grants relief to the widows and orphans of deceased members Membership is open to any registered medical practitioner who at the time of his election is resident within a 20 mile radius of Charing Cross The subscription is 2 guineas a year, or a member may become a life member by paying a sum fixed by the by laws of the society The invested funds now amount to over £100,000 Application forms for membership and full particulars may be obtained by applying to the secretary at the offices of the society, 11, Chandos street, Cavendish square, London, W The next election takes place on Oct 13th Application forms must reach the secretary on or before Sept 22nd

PUBLIC HEALTH IN JAMAICA —The last annual report of the Registrar General of Jamaica gives much statistical information relative to the social condition of the colony during the twelvemonth from April 1st, 1907, to March 31st, 1908 The last census was taken in 1891, and the use of estimated numbers for the total population and other bases of statistics has therefore been necessary for 17 years The estimated population of the island on March 31st, 1908, was 835,799 The proportional marriage, birth-, and death rates are calculated on a mean population of 834,012 estimated as on Sept 30th, 1907 The marriages registered in the year numbered 6251, being at the rate of 7 4 marriages per 1000 of the estimated population Of these marriages 21 were civil marriages, the remaining 6230 being solemnised by ministers of 17 different religious denominations A remarkable feature in connexion with this subject was the impulse given to matrimony by the terrible earthquake which devastated Kingston on Jan 14th, 1907 Since 1903 there had never been more than 988 marriages in any quarter of a year up to the end of the December quarter in 1906, but during the March and June quarters of 1907 the numbers rose to 2797 and 2319 respectively During the year under consideration there were 29,210 births, giving a birth rate of 35 0 per 1000, which is the lowest since 1886 87, when the rate was 34 7 per 1000 As usual, the illegitimacy rate was rather high when regarded from a European point of view, being 61 7 per 100 births, the lowest rate since the year 1896-97, when it was 61 1 per 100 In this respect the parish of St Andrew seems to be the most virtuous, having an illegitimacy rate of only 48 8 per 100, whereas the parish *of St Thomas is at the other extremity of the scale with* a rate of 70 5 per 100 The number of deaths registered during the year was 23,672, giving a death rate of 28 3 per 1000, which is the highest death rate recorded in the 30 years of registration The rate for the preceding year was 26 2 per 1000 Of the 23,672 deaths, 27 6 per cent were deaths of children under one year of age, and 44 5 per cent were deaths of children under five years of age With respect to the causes of death, the largest number under any detailed heading was 7422 tabulated as "ill defined and not specified causes" The deaths from specified causes included 252 from influenza, 223 from enteric fever, 1083 from diarrhœa, 635 from malarial fever, 4814 from undistinguished kinds of fever, 30 from leprosy, 30 from yaws, 167 from pulmonary tuberculosis, and 1284 entered under the heading of "phthisis (not otherwise defined)" No death from small pox was recorded

THE BRUSSELS MEDICAL GRADUATES' ASSOCIATION —The annual meeting and dinner of this association was held at the Garden Club, Imperial International Exhibition, on July 15th, Dr Richard Paramore, the President, being in the chair Dr Oliver, as the guest of the evening, proposed the toast of "The Brussels Medical Graduates' Association' In responding to this toast the honorary secretary, Dr Arthur G Haydon, said that during the past year considerable progress had been made The membership was increasing, particularly from the colonies Every one of the recommendations of the council of the association had been carried out by the University of Brussels He hoped to be able to organise the annual meeting and dinner next year in Brussels during the great Exhibition there of 1910 Dr Major Greenwood (honorary treasurer) and Dr W E Kirby (past President) also spoke The officers elected for the ensuing year were —President Dr Paramore Vice-President Mr A D Cowburn Honorary treasurer: Dr Greenwood *Honorary secretary* Dr Haydon

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Colour Tests in the Mercantile Marine

ON the motion of Lord MUSKERRY in the House of Lords, a return has been ordered showing the colour tests adopted by France, Germany, and the United States for the Mercantile Marine Services

Metropolitan Ambulances Bill

Sir WILLIAM COLLINS has obtained a second reading for the Metropolitan Ambulances Bill in the House of Commons It is hoped that when the Bill goes before a committee further steps may be taken to decide whether the *London County Council or the Metropolitan* Asylums Board will be the authority charged with the administration of the ambulances

Milk and Dairies (Scotland) Bill

The Scotch Office has promised to give favourable consideration to a number of amendments which are suggested to the Milk and Dairies (Scotland) Bill Lord PENTLAND the Secretary for Scotland received a deputation representing the corporation of Glasgow on July 16th and discussed with it points on which a strengthening of the provisions was desired The members of the deputation suggested that certain ambiguities should be removed from Clause 13 which forbids the keeping of diseased animals along with healthy They wanted to put a clear and effective check on the evasion of the Bill in regard to the disposal of tuberculous cows They also asked that the medical officer in urgent cases of an outbreak of infectious disease should be empowered to make an interim order stopping the supply of milk from a suspected *dairy* The corporation of Glasgow also desired to retain its powers under a local Act of dealing with the sale of milk from a farm or dairy at which infectious disease existed Lord PENTLAND promised to give these points his favourable consideration The deputation considered this reply satisfactory One of the members of the deputation was Dr A K CHALMERS the medical officer of health of Glasgow

The Milk Bill

to enforce its recent Tuber-

If the measure is again

HOUSE OF LORDS

WEDNESDAY, JULY 14TH

Milk and Dairies (Scotland) Bill

gistration of dairies in the district of each local authority It was

provided for the occasional inspection
health and for the inspection of the
Penalties for offences were provided
necessary could be obtained by the lo
milk business These were the
and he was sure that their lordships would be in entire sympathy with the objects of the measure which were to protect the great urban communities in regard to their milk

moved

municate forthwith the fac

which it was intended to send the animal. If the noble lord would look at the Bill he would see that the owner of the cow was practically prohibited from parting with the animal, and that seemed to him to be inconsistent with the subsection. Another point on which he wanted to comment was that the examination and inspection of milk and butter were not applied to similar articles coming from abroad. He would put down amendments dealing with this matter at a later stage. He also pointed out that the whole expense of the compensation for the slaughter of tuberculous cows would fall upon the ratepayers. It had been said upon good authority that there were 200,000 or 300,000 tuberculous cows in the country which would come within the Tuberculosis Order of the Board of Agriculture. The result of the legislation would be a heavy charge on the rates, and he hoped the Government would be in a position to make a reassuring statement on this matter.

The Earl of Crewe said that he was surprised at the Earl of Camperdown's computation of the number of cattle at 200,000 or 300,000 which would have to be slaughtered under the Bill as tuberculous. Did the noble earl mean that these cows would come under the tuberculin test or that they were cows which should be slaughtered because they were so emaciated by disease that their milk would be contaminated? He did not believe that the number of the latter class would reach the total mentioned by the noble earl.

The Earl of Camperdown said that the computation was not his own. There were, however, a large number of tuberculous cows in the country. Everyone connected with agriculture knew that tuberculosis was very prevalent among cattle.

The motion for the second reading was agreed to.

HOUSE OF COMMONS.

Thursday, July 15th.

Poor-law Medical Officers in Scotland.

Mr. Cathcart Wason asked the Lord Advocate whether he would grant a return relating to dismissals of Poor-law medical officers in Scotland and the trouble thereby entailed on the poor.—Mr. Ure replied: If my honourable friend will move for a return in how many and in what parishes during the past three years Poor-law medical officers in Scotland have vacated office and what period in each case has elapsed before the appointments have been permanently refilled the Government will offer no opposition.

Monday, July 19th.

Vaccination in London Casual Ward.

Mr. J. Ramsay Macdonald asked the President of the Local Government Board whether, on the night of July 13th, F. J. Wilson, after having been admitted to the City of London casual ward in Shoe-lane, was expelled because he refused to be vaccinated; whether such conduct was the rule at this ward; and whether the Local Government Board proposed to take any action on the matter.—Mr. Burns replied: I have made inquiry and I am informed that a man named James Wilson was admitted to the casual wards on the 13th inst., was vaccinated without any complaint being made by him, and was discharged from the casual wards after the usual regulation period. I understand that it has been the custom at these wards for some years for persons admitted to the casual wards to see the medical officer on admission, and that unless they object he vaccinates them if necessary. The acting master states that he has never known a casual pauper to be ordered out or ejected for refusing to be vaccinated.

Tuesday, July 20th.

Fees for Vaccination Certificates.

Mr. Tyson Wilson asked the Secretary of State for the Home Department whether, in view of the fact that some justices of the peace charged a fee for signing an exemption from vaccination certificate, and that no fee was charged by others, he would, with the object of securing uniformity in the administration of the Vaccination Act, 1907, by circular or other means, inform the magistrates that they were not justified in charging a fee unless the services of the justices' clerk were utilised.—Mr. Gladstone (by written answer) replied: If the honourable Member will inform me of any cases in which justices have charged a fee for anything done by them in their magisterial capacity I will communicate with them. I do not, however, think that a general circular is called for, as I have no doubt that justices generally are properly informed on this subject.

Medical Examination of Postmen.

Sir William Collins asked the Postmaster-General whether, in connexion with the employment of postmen on cycling duties, any additional duties in regard to medical examination of postmen to be so employed had been placed upon medical officers; and whether he would state what regulations the Post Office had laid down in regard to such examinations.—Mr. Buxton wrote in reply: It has for some time past been a part of the duty of Post Office medical officers to examine postmen about to be employed on cycling duty. I have recently seen cause to extend this examination to men already employed on cycling duty, and to cause it to be repeated at intervals of four years. In order to ensure a searching and complete examination, a list of questions has been compiled for the use of medical officers, indicating those points which are of importance in the interest of the staff and of the public service.

Wednesday July 21st.

Germ-carriers in the Army.

Captain Clive asked the Secretary of State for War whether, seeing that treatment both with general and specific vaccine was now admitted to have failed, he could say when the supposed germ-carriers at Milbank Hospital would be released; and what compensation would be given them for detention, loss of promotion, &c.—Mr. Haldane replied: Although the general and specific vaccines have not been successful in the urinary cases, another method of treatment is now being employed, and it is not proposed to discharge these men as medically unfit until every reasonable method of treatment has been tried. I may point out that these men are undergoing this special treatment in their own interests and in the interests of their comrades to whom, in their present state, they would be considered a danger. No question of compensation arises.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institut and others possessing information suitable for this column, invited to forward to The Lancet *Office, directed to the S Editor, not later than 9 o'clock on the Thursday morning of e week, such information for gratuitous publication.*

Bhuttacharji, J. C., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has b appointed District Medical Officer and Public Vaccinator for Lutterworth Union, Leicestershire.

Brown, D. W., M.D., M.Ch. Edin., has been appointed Certify Surgeon under the Factory and Workshop Act for the Pre (West) District of the county of Lancaster.

Browne, F. J., M.B., B.Ch. Aberd., has been appointed Certify Surgeon under the Factory and Workshop Act for the Abertil District of the county of Monmouth.

Dingle, H., L.R.C.P. Lond., M.R.C.S., has been appointed Certify Surgeon under the Factory and Workshop Act for the Barmo District of the county of Merioneth.

Griffith, William, M.B., Ch.B. Vict., M.R.C.P. Lond., has been pointed Assistant Physician to St. John's Hospital for Disease the Skin.

James, R. R., F.R.C.S., has been appointed Assistant Ophthalmic S geon to St. George's Hospital.

Mayne, John FitzGerald, M.B., Ch.B. Edin., has been appoin Senior Resident Surgeon at Oldham Infirmary.

McBride, C. A., M.D., C.M. Tor., L.R.C.P., L.R.C.S. Edin., has b appointed Casualty Officer to St. John's Hospital for Diseases of Skin.

Wood, T., M.D., C.M. Edin., has been appointed Certifying Surg under the Factory and Workshop Act for the Leith District of county of Edinburgh.

Woodcock, Louisa, M.D., B.S. Lond., has been appointed Clin Assistant to St. John's Hospital for Diseases of the Skin.

Vacancies.

For further information regarding each vacancy reference should made to the advertisement (see Index).

Birmingham, University of.—Chair of Zoology. Salary £600 annum.

Blackburn and East Lancashire Infirmary.—Junior House Surg Salary £80 per annum, with board, washing, &c.

Bridgwater Hospital.—House Surgeon, unmarried, for six mont Salary at rate of £80 per annum, with board, lodging, and washin

Cameron Hospital, West Hartlepool.—House Surgeon, unmarri Salary £100 per annum, with board, rooms, and laundry.

Carshalton, Surrey, Children's Infirmary.—Assistant Medi Officer. Salary £150 per annum, with board, lodging, washing.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C Assistant Surgeon.

Cheshire, Crossley Sanatorium, Delamere Forest.—Assistant Medi Officer. Salary £100 per annum, with board, apartments, laundry.

Chesterfield and North Derbyshire Hospital.—Junior Ho Surgeon. Salary £80 per annum, with board, apartments, laundry.

City of London Hospital for Diseases of the Chest, Victoria P E.—House Physician for six months. Salary at rate of £75 annum, with board, residence, and washing.

Derby Borough Asylum.—Assistant Medical Officer. Salary £ per annum, with board and washing.

Derby, Derbyshire Royal Infirmary.—Assistant House Surge Salary at rate of £60 per annum, with board, residence, washing.

Derbyshire County Council.—Assistant Bacteriologist. Salary £ per annum.

Gloucestershire, Cotswold Sanatorium, near Stroud.—Assista unmarried. Salary £120, with all found.

Harris Parish.—Medical Officer. Salary £126, with house.

Hospital for Consumption and Diseases of the Chest, Brompton. Resident House Physicians for six months. Salary £25.

Hospital for Epilepsy and Paralysis and other Diseases of t Nervous System, Maida Vale, W.—Honorary Anæsthetist.

Hull Royal Infirmary.—Honorary Assistant Ophthalmic Surgeon

Jerusalem Mission Hospital.—Junior Medical Officer.

Kirkburton, near Huddersfield, Storthes Hall Asylum.—Locu Tenens for two months. Salary £3 3s. per week, with boa lodging, and attendance.

Lancaster, Royal Infirmary.—House Surgeon, unmarried. Sal £100 per annum, with residence, board, attendance, washing.

Leeds, Hospital for Women and Children.—House Surgeon six months. Salary at rate of £50 per annum, with board.

London (Royal Free Hospital) School of Medicine for Women, 8, Hunter street, Brunswick-square, W.C.—Mabel Webb Research Scholarship in Pathology, Physiology, or Chemistry. Value £30 per annum.

Lurgan Union Workhouse, Ireland.—Resident Medical Officer (female). Salary £80, with apartments and rations.

Macclesfield General Infirmary.—Junior House Surgeon. Salary £60 per annum, with board and residence.

Manchester, Ancoats Hospital.—Resident House Physician. Salary £80 per annum, with board, residence, &c.

Metropolitan Asylums Board Fever Hospitals.—Locum Tenens Assistant Medical Officers. Salary at rate of £180 per annum, with board, lodging, and washing.

Mo[illegible] Diseases of the [illegible] Junior Resident [illegible] ficer. Salary in [illegible]

Newport and Monmouthshire Hospital.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

Perth Royal Infirmary.—House Surgeon. Salary £60 per annum, with board.

Queen's Hospital for Children, Hackney-road, E.—House Surgeon, also *House Physician, both for six months* Salaries at rate of £60 per annum, with board, residence, and laundry.

Rotherham Hospital and Dispensary.—Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

St. Mary, Islington, Infirmary, Highgate-hill, N.—Assistant Medical Officer. Salary £130 per annum, with board and residence,

Sheffield Union Hospital.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, and allowances

Southampton, Royal South Hants and Southampton Hospital—*House Physician for six months.* Salary at rate of £100 per annum, with rooms, board, and washing.

Sunderland and Durham County Eye Infirmary, Sunderland.—House Surgeon, unmarried. Salary £210 per annum.

Sunderland Infirmary.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

Sunderland, Monkwearmouth and Southwick Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Teignmouth Hospital, S. Devon.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

Tiverton, Devonshire, Infirmary and Dispensary.—House Surgeon and Dispenser. Salary £80 and all found.

Wallingford, Berks County Asylum.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.

Births, Marriages, and Deaths.

BIRTHS.

Aitchison.—On July 18th, at Drayton-terrace, S.W., the wife of Charles U. Aitchison, M.D., of a son.

[illegible] of William [illegible] of J. Alison

Highet.—At Bangkok, Siam, on the 16th inst., the wife (*née* Emma Robinon) of H. Campbell Highet, M.D., D.P.H., Principal Medical Officer, Local Government, of a son.

Newman.—On July 15th, at Windhill, Bishop's Stortford, the wife of J. C. Newman, F.R.C.S., of a daughter.

Smith.—On July 14th, at Cleveleys, Redbourne-avenue, Church End, Finchley, the wife of Thomas Smith, M.R.C.S., L.R.C.P., of a son.

Street.—On July 17th, at Cranfield, Woburn Sands, Beds., the wife of Albert Ernest Street, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

Woolley.—On July 12th, at Claremont-road, Surbiton, the wife of Edward J. Woolley, M.D., of a son.

MARRIAGES.

Ain[illegible]

DEATHS.

Batten.—On the 15th July, 1909, at Brunswick square, Gloucester, Rayner Winterbotham Batten, M.D. Lond., F.R.C.P., in his 75th year.

Brown.—At the Edinburgh Hydropathic, Craiglockhart, on the 14th inst., William Brown, F.R.C.S.E., Consulting Medical Officer of Health for the City of Carlisle.

Hartley.—On July 15th, at Bishop's Stortford, Charles Hartley, M.R.C.S., aged 60 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL HEROES OF ITALY'S "RISORGIMENTO."

For more than a month the Italian kingdom has been celebrating the jubilee of her "*Risorgimento*" (political resurrection), and, quite regardless of the wounded *amour propre* of her Austrian "consorella" in the Triple Alliance, nay, with an effusive delight in the commemo-[illegible] her sons in the [illegible] drove the hated [illegible] hich never rested till, from its perch on the Capitol, it looked down on an Italy free and united from the Alps to Etna. A conspicuous place of honour in that mighty movement she has reserved for her medical sons, whose deeds of heroism in ambulance and hospital, nay, on the stricken *field itself*, are for all time engraven on her heart—

"Monumentum aere perennius."

If, according to Carlyle, Mazzini sacrificed to the Revolution one of the very finest literary faculties of the nineteenth century, not less true is it that Agostino Bertani devoted to the medico-military service of the patriotic arms a genius for surgery which, in the "cloistered calm" of the University clinique, might have fructified in professional conquests, surpassing even those of his master Panizza, or of Panizza's master Scarpa *Even in the few years allotted to him* after the fall of the Temporal Power and the consummation of his country's ideal Bertani gave proof of his hygienic sagacity and initiative in his masterly "Codice Sanitario," which, to her inestimable profit, Italy is steadily utilising in city and in commune. A Milanese by birth, though of Mantuan *origin, he was one of a phalanx of medical men to whom a grateful* country has just dedicated a commemorative "immortelle"—an album issued by the "Milano Sanitario" to preserve the names of those surgeons and physicians of Lombard, and more especially of Milanese, parentage who gave up their *lives and future prospects to the cause of the motherland.* But for this memorial young Italy would be ignorant of the personality and career of many a brilliant graduate in medicine whose work in the improvised hospital or on the battlefield under fire was as unselfish as it was effective—recognising no distinction between Italian, French, or Austrian among the wounded, and only suspended by the collapse of the worker himself, succumbing to fatigue when not the victim of a hostile bullet. Some notion of that work may be formed when we read that in Milan alone from June 6th to July 31st, 1859, there were under treatment 25,568 sick and wounded from the *battlefield*, including 14,641 French, 3790 Italians, and 7137 Austrians—not *forgetting the fact that on June 5th there* were already in the various hospitals of Milan 2066 local patients. Of the soldiers who left the wards "cured" or transferred in convalescence to other resorts, there were 10,399 French, 391 Italians, and 5935 Austrians; while there died 1591 in all—that is, 815 French, 31 Italians, and 745 Austrians. Still surviving among the Milanese surgeons who took part in this service, many of them, happily, still active for the public good, are the Cavaliere Dr. Ferdinando Calderini, colonel of the reserve; Dr. Malachia de Cristoforis, senator of the kingdom; the Cavaliere Dr. Felice dell' Acqua, emeritus physician-in chief *to the municipality; the Commendatore Dr. Rocco Gritti, emeritus* head physician of the Ospedale Maggiore; Dr. Paolo Mantegazza, senator of the kingdom, professor of anthropology in the Istituto de' Studi Superiori in Florence, Dr Amilcare Ricordi; Dr. Emilio Sozzani; the Cavaliere Achille Visconti, emeritus clinician-in chief of the Ospedale Maggiore; and the Commendatore Giuseppe Candiani, pharmaceutical chemist and founder and president of the Casa dei Veterani *of Turate.* "*We have made Italy,*" said Cavour's successor Massimo D'Azeglio in 1860; "we have now to make Italians!" Of that second creation Italy need never despair if only she remain true to her nobler traditions and follow in the steps of those practitioners of the healing art who, dead or still surviving, contributed so effectively to her "Risorgimento," political and social, scientific and professional.

THE TRUTH ABOUT ST. HELENA AS A HEALTH AND HOLIDAY RESORT.

In a recent official report to the Colonial Office the Governor of *St. Helena (Lieutenant-Colonel H. L. Gallwey, C.M.G.)* has thought it advisable to deprecate what he considers the exaggerated claims put forward by injudicious well wishers in regard to the supposed advantages of the island as a holiday resort. The most alluring inducements, observes Colonel Gallwey, are being held out by these people through the columns of the English newspapers as to St. Helena's advantages. Among those claimed are a splendid climate, cheap *hotels* and *boarding houses*, comfortable houses at a low rent, and so on. They even go so far as to state that St. Helena possesses some of the finest golf links in the world. The kindness which *prompts St. Helena's* well-wishers in England to promote the colony's interests is fully appreciated, but it is generally recognised that more harm than good must result from misrepresentation, which can only lead to disappointment among any persons who might decide to visit the colony on the strength of such unwarranted inducements. It would serve the island's interests better if only facts were stated. These facts are that the climate is very healthy, and, although in the tropics, that of the highlands is very temperate and never too hot. There is not a single hotel in the island, and the so-called boarding-houses in Jamestown might at a pinch accommodate half a dozen people. There are no boarding-houses in the country, where visitors would require accommodation. There are about six untenanted houses which could be leased at reasonable rents, half of which are either unfurnished or only partly furnished. "Some of the finest golf links in the world" must be taken as referring to the one golf course of nine holes, there being no suitable site for a second course in the island. His Excellency is of the opinion that if visitors were forthcoming boarding-houses would soon spring up. It is not to be expected, however, that such establishments will be started on chance. As things stand at present, accommodation for more than a very few visitors does not exist, and any persons proposing to visit the colony would be wise to ensure beforehand that the accommodation they require is both suitable and available. Visitors, too, must be prepared to find the island somewhat dull. There are few diversions by day and practically none by night. Taking it all round, the island's advantages, as far as holiday and health seekers are concerned, lie almost entirely in its healthy climate. This estimate of the island is in the Governor's own words, and we think it well to repeat his warning.

THE SALE OF FOOD AND DRUGS ACT AT BRISTOL.

We have received a copy of the report of the public analyst and bacteriologist of the city and county of Bristol (Mr. Edward Russell, B.Sc., F.I.C.) for the year ending Dec. 31st, 1908. The report is divided into three sections: (1) Food and drugs work; (2) bacteriology; and (3) miscellaneous analyses. The bacteriological section refers for the most part to pathological work undertaken in connexion with cases of diphtheria, tubercle, and enteric fever. There are, however, recorded some special inquiries, amongst which attention is given to the straining cloth used by milkmen and to cream, both of which gave evidence of bacillus coli. The number of examinations made in this section was 5764. Under the Food and Drugs Acts 1303 samples were examined. The figures show a slight increase in the adulteration rate in Bristol, which is contributed chiefly by milk. Out of 101 samples, of which 36 proved to be watered, 64 samples were found to be deficient in fat. As regards preservatives, the use of salicylic acid in several samples of aerated beverages is noted.

THE COMPLETE ANTIVIVISECTIONIST.

The following letter from Sir George W. Kekewich addressed to the editor of the *Daily News* appeared in the issue of that paper for July 17th, under the heading "Doctors and Vivisection."

> Sir,—In a recent issue of the *Daily News* there appears a letter from a Mr. Porter, of St. Luke's Hospital for the Insane, who says that at the anti-vivisection meeting in Hyde Park on Saturday last he challenged a statement of mine to the effect that vivisection made medical men callous, and that they experimented on persons in hospitals, who, of course, usually belong to the working class. He challenged it, according to the newspapers, by calling upon me to substantiate my dirty, blackguardly lies—he states in his letter in milder language that I was unable to substantiate my "statement" by evidence. He now asks for facts.
>
> Sir, I am not going to fall into that trap; names and places would mean actions for libel, backed by most of the medical profession. But it is matter of common knowledge that such things as I mentioned do take place, though of course infrequently. I do not wish it to be understood that I make any accusation of the kind against the great mass of men in one of the most arduous and honourable of professions.
>
> If Mr. Porter desires evidence, I may, however, refer him to a pamphlet entitled "Human Vivisection: A Statement and an Enquiry," published at Chicago, U.S.A., by the American Humane Association, of 560, Wabash-avenue.
>
> He will there find ample evidence that the statement I made is founded on fact.
>
> Yours &c.,
>
> G. W. KEKEWICH.

We will leave this effusion to speak for itself, only reminding our readers of the famous lawsuit of Bayliss *v.* Coleridge, a case in which a judge and jury were asked to examine a specific charge of cruelty made against a scientific investigator by an opponent of humanitarian progress. We would add that agitators, to command success, need courage as well as wind.

THE MEDICAL MISSION AUXILIARY.

Mercy and Truth, the official organ of the Medical Mission Auxiliary of the Church Missionary Society, in its issue for July contains, in addition to the usual reports from the various foreign stations, the annual report of the work of the auxiliary during the year 1908-09. The value of medical mission work is now generally admitted, though medical missions do not receive the financial support which they undoubtedly deserve. Although the Medical Mission Auxiliary is able to report an increase in its receipts and a balance of £3707 after the payment of expenses, it is with regret that we notice that this balance has to be accounted for "by reductions imposed upon the missionaries in the field." Men who risk their lives in the service of humanity in unhealthy foreign climates should receive the most generous treatment from those who send them forth in the name of charity. The difficulties and hardships of medical missionary life can scarcely be realised by those whose knowledge is obtained from annual reports and lectures, or the work would be more heartily supported. The cost of supporting a bed in a Church Missionary Society's hospital in India, Persia, Palestine, or Egypt is £10 per annum; in China or East Africa, £5. Cheques should be crossed and made payable to Mr. R. Maconachie, Church Missionary House, Salisbury-square, London, E.C.

COMPENSATION FOR A KELOID.

In the City of London Court on July 19th, before Judge Lumley Smith, K.C., a boy, 15 years old, sued the Great Eastern London Motor Omnibus Company, Limited, to recover damages for an unusual cause. It appeared that as he was crossing King William-street one of the defendants' motor omnibuses, going, it was said, at a "most reckless pace," struck him to the ground. It dragged him a considerable distance, and his leg was injured. The boy was taken to Guy's Hospital, where he was detained for many weeks, and treated by skin grafting. This, however, was not successful, and keloid had supervened; the boy's knee was contracted, and it was feared that he would never be able again to follow any occupation because of the keloid condition. Medical evidence was given that the plaintiff's disease was incurable and that it might be tuberculosis. Nobody really knew what keloid was. Two medical men, called for the defence, admitted that the disease was not curable; but they considered that the plaintiff's condition was not so serious as had been depicted. Ultimately the plaintiff agreed to accept £75 as compensation.

"INFORMING THE POLICE."

Mr. G. F. Roumieu, the coroner for West Surrey, had something to say at a recent inquest, near Godalming, on the question of medical men giving information to the police. The case was one in which a servant girl had wilfully poisoned herself. A medical man was called in and attended the girl until her death 12 hours after she had taken the poison, of which event the lady of the house informed the police nine hours later. The coroner said that he believed there was a strong feeling in the medical profession against giving information to the police, but there was a common law obligation upon every citizen in such circumstances to inform the police, whose duty it was to inform the coroner. If a person attempted to take his life it was an offence, a common law misdemeanour, whether the attempt was successful or not, and the police ought to be informed. In the event of a person dying this was obligatory. The police should be informed as quickly as possible in such cases, because it was their duty before anything was moved to take the evidence as to the surrounding conditions and everything that might throw light upon the death. In this particular instance no blame attaches to the medical man, who ceased his attendance on a trying case after midnight, because he omitted to call on the police before proceeding home, and doubtless the whole household was too upset by the occurrence to take the proper steps at once. But it is well for medical men to bear in mind that in such cases the police must be informed promptly, especially as in such tragic situations the medical attendant is often the man to whom friends or relatives turn for immediate guidance beyond the actual treatment of the patient.

AN INCORRIGIBLE PARENT.

In an annotation last week we reported the death of an infant at Brighton from overlying by a notoriously drunken mother. We learn that the woman was again brought before the Brighton magistrates on July 19th—nine days after the proceedings in the coroner's court—charged with being drunk while in charge of a child aged three years and four months. The magistrates probably had not forgotten the proceedings before the coroner's court on July 10th, the woman's first appearance at the police-court only a few days before the child's death on the charge of neglecting her children, nor her record of eight previous convictions—several for a similar offence. On this occasion a policeman found the woman leaning against a wall at half-past ten in the morning in such a condition of drunkenness as to be quite incapable of taking care of the child she had with her. It is satisfactory to note that the magistrates realised the seriousness of the offence in this case, and sentenced the woman to one month's hard labour. But considering all the circumstances the sentence does not err on the side of severity.

◆

Fairplay.—We cannot express any opinion as to the legality of such proxies, but we are clear that the request for them should never have been sent out. The rules of the government of the infirmary are intended to provide equal chances to all competitors for a vacant post, and the use of private information to secure premature support for one candidate cannot be approved of. Canvassing appears not to be forbidden by the rules, and the amount to which it is employed must be left to individual taste. The probability is that the General Medical Council would not consider the matter one suitable for their notice.

Mr. W. G. Walford is thanked for his interesting communication.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St

.M.), St.
), West-
College
Mark's

National Orthopaedic (10 A.M.), St. Peter's (2 P.M.), Samaritan
9 30 A.M. and 2.30 P.M.), Gt. Northern Central (2 30 P.M.), West-

(2 P.M.), Middlesex
College (9 15 A.M.),
St. Mary's (10 A.M.),
P.M.), Children, Gt.
don (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index to Vol. I. of 1909, which was completed with the issue of June 26th, and the Title-page to the volume, were given in THE LANCET of July 3rd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 22nd, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall	Solar Radio in Vacuo	Maximum Temp Shade	Min. Temp	Wet Bulb	Dry Bulb	Remarks.
July 16	29·69	S.W.	0 32	81	66	55	56	57	Raining
" 17	30·04	S.W.	0·13	117	74	57	62	65	Cloudy
" 18	30 21	S.W.	...	129	78	60	63	68	Cloudy
" 19	30 26	N.W.	...	125	75	53	59	65	Fine
" 20	30·25	W.	...	126	77	55	55	61	Fine
" 21	29 92	S.W.	...	89	70	59	59	62	Raining
" 22	29 80	S.W.	...	103	69	59	59	63	Cloudy

Communications, Letters, &c., have been received from—

A.—Dr. W. D. Anderson, Oban; Armstrong College, Newcastle-on-Tyne, Secretary of; Professor H. B. Allen, Melbourne; Messrs. Allen and Hanburys, Lond.; Ancoats Hospital, Manchester.

B.—Dr. W. R. Bates, Ilkley; Messrs. Bates, Hendy, and Co., Lond.; Mr. T. Bell, Lancaster; Mr. H. Birmingham, Goulburn, New South Wales; Birmingham University, Secretary of; B. A.; Mr. G. S. Bigg, Lond.; Messrs. J. Barker and Co., Lond.; Mr. J. A. Barth, Leipzig; Mr. E. T. Bourne, Manchester; Mr. R. W. Burkitt, Sylhet; *British Medical Journal*, Lond., Editor of; Messrs. Baillière, Tindall, and Cox, Lond.; Bombay, Secretary to Government of; Messrs. Blundell and Rigby, Lond.; British Fire Prevention Committee, Secretary of.

C.—Dr. George Carpenter, Lond.; Dr. F. C. Coley, Newcastle-on-Tyne; Dr. E. Cautley, Lond.; Captain R. M. Carter, I.M.S., Kasauli, India; Messrs. Cornish Bros., Birmingham; Continental Tyre and Rubber Co., Lond.; Messrs. T. Cook and Son, Lond.; Messrs. Cassell and Co., Lond.; Connaught Motor Co., Lond.; Dr. V. Cammareri, Rome; Mr. F. W. Clarke, Chorlton-cum-Hardy.

D.—Sir Dyce Duckworth, Bart., Lond.; Dr. S. E. Dore, Lond.; Derby Borough Asylum, Clerk of; Rev. G. C. Dutt, Joynagar; Derbyshire Royal Infirmary, Derby, Superintendent of; Mr. C. S. Dear, Lond.; Messrs. Davies and Co., Lond.

E.—Major H. M. Earle, I.M.S., Dharmsala.

F.—Factory Girls' Country Holiday Fund, Secretary of; Messrs. P. and H. Freyberg, Lond.; Messrs. H. Frowde, and Hodder and Stoughton, Lond.; "Fairplay," Doncaster; Messrs. Fairchild Bros. and Foster, Lond.

G.—Dr. Major Greenwood, Lond.; Gt. Eastern Railway Co., Lond., Continental Traffic Manager of; General Medical Council, Lond., Registrar of.

H.—Dr. R. T. Hewlett, Lond.; Mr. C. T. W. Hirsch, Woolwich; Humanitarian League, Lond.; Mr. J. Hatton, Bath; Messrs. J. Haddon and Co., Lond.; The J. F. Hartz Co., Lond.; Mr. J. J. Harding, Ballincollig; Dr. W. Hutchinson, Widnes.

I.—International Congress on Alcholism, Secretary of.

J.—Dr. O. Jennings, Le Vesinet.

K.—Dr. Catherine Kirk, Kilsyth; Messrs. Kutnow and Co., Lond.; Dr. J. Knott, Dublin; Messrs. R. A. Knight and Co., Lond.; Dr. J. R. Kaye, West Riding, Yorks.

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Presidential Address

ON

THE BELFAST MEDICAL SCHOOL: A SURVEY OF THE STATE OF MEDICAL EDUCATION: NECESSARY REFORMS AND THE QUEEN'S UNIVERSITY OF BELFAST.

Delivered at the Seventy-seventh Annual Meeting of the British Medical Association

BY SIR WILLIAM WHITLA, M.D. R.U.I., LL.D. GLASG.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, QUEEN'S COLLEGE, BELFAST.

YOUR EXCELLENCIES, LADIES, AND GENTLEMEN,—I discharge my first duty, and that which lies nearest to my heart, when I thank the members of the British Medical Association for the honour which they have conferred upon me by electing me to the presidential chair of their great society, numbering over 20,000 members, and containing in its ranks all that is best in the medicine of to-day, not only in the British Isles but in our great colonies and dependencies beyond the seas.

It is my pleasing duty to offer, upon behalf both of the members of the medical profession residing in and around Belfast and in the Province of Ulster, a hearty Irish welcome to our visitors, and this greeting is most cordially endorsed by our citizens and chief magistrate, who have honoured us by their presence to-night at this our seventy-seventh annual meeting.

Our worthy and public-spirited Lord Mayor and city council have given practical proof of the sincerity of their welcome by generously placing at our disposal their Exhibition and Ulster halls and their Botanical Gardens, as our esteemed Vice-Chancellor and his professors have thrown open to us for the week the entire range of class-rooms and buildings in the University.

MR. SIMEON SNELL.

My next duty is a sad one, as I refer to the irreparable loss sustained by the Association in the death of Professor Simeon Snell of Sheffield, who departed this life on April 17th last, during his year of office as President. Little did any of us, except, perhaps, his immediate circle of friends, suspect, when admiring his genial and manly presence at the highly successful Sheffield meeting a brief year ago, that never again were we to be privileged to sit under the spell of his magnetic personality. The exhaustive sketch of his strenuous life which appeared in our Journal soon after his death [illegible] about the high position which he [illegible] neverthe- [illegible] mourn for him, and to pay [illegible] need of a melodious tear." His whole life was a long series of brave and strenuous efforts to make his profession better than he found it, to improve the condition of his fellows, and to exalt the position of the city in which his lot was cast. The cause of his death, which occurred at the comparatively early age of 56 years, was arterio-sclerosis, and, as remarked by his friend, Sir Anderson Critchett, "had he been less prodigal of his boundless energy we might perhaps have been spared his untimely loss, but his faculties were ever at concert pitch, and he seemed to realise to the full Elizabeth Barrett Browning's terse and forcible injunction, 'Get work; be sure 'tis better than that you work to get.'" This continuous draft upon his capacity for work led to the inevitable result—

> "Comes the blind Fury with th' abhorred shears,
> And slits the thin spun life. 'But not the praise.'"

But not the praise—since he faded from our sight, wearing the laurel crown of our great Association.

THE GROWTH OF BELFAST.

I shall not pause to dwell, as is usual on such occasions, upon the ancient historical associations of the city which the m[illegible] by their visit. Our [illegible] his "History of Belfas[illegible] "Belfast as a [illegible] offers a marked contrast in this [illegible] hich the annual meetings of the [illegible] held in England where the histor[illegible] often in miniature the history of [illegible] iseless to deplore as it woul[illegible] it in—nevertheless has not [illegible] effect upon individual and [illegible] the sturdy citizen of Belfas[illegible] not boast a gen'rous race." [illegible] thoroughly he has learned the lesson if you survey our busy wharves with their evidences of a flourishing world-wide commerce, as you see the stately leviathans which glide down to the sea from our *shipbuilding yards, and as you catch a glimpse* of the myriads of human spiders who spin and weave from morn till night in our great flax mills and linen factories.

I shall not weary [illegible] the almost unparalle[illegible] made by Belfast in [illegible] you that since the Association honoured the city by its first visit, just a quarter of a century ago, the population has almost doubled and is still making rapid strides, which in a few more years promise to reach the grand total of half a million souls. At the same time it is a source of honest pride to the thoughtful Belfast man that whilst his native city has been directly prospering by his energy during the last three or four decades the achievements which have brought this success to her have in some instances purchased far-reaching benefits to many parts of the habitable globe. We have only to reflect upon the perfection of the processes employed in the spinning and weaving of linen, and the epoch-marking innovations in naval architecture inaugurated in 1870 by Sir Edward Harland, [illegible] applied and perfected by his [illegible] yard which it will be your privil[illegible] week. The development of these new principles may in a sense be regarded as having annihilated sea distance, knitting together all parts of our huge empire, and bringing within comparatively easy reach the far-away places of the world. Neither do we forget the important part played in this triumph over storm and wave by our illustrious townsman, Lord Kelvin, who by his perfection of the mariner's compass has laid mankind under lasting obligations to his genius.

I shall refer to but one other invention of comparatively recent birth in Belfast. The application of the pneumatic principle to vehicular tyres by our townsman has in a similar sense anniliated land distance. Without its aid the motor-car (in which so many of you now speed upon the wings of the wind on your errands of mercy) would have been an impossibility. The indirect outcome of the use of the Dunlop tyre has been the planting of flourishing industries in many English and continental centres, as it has already covered with rubber trees the slopes of Ceylon and the swamps of the Malay Peninsula, whilst its direct effect has been the establishment of a revolution in human intercourse. From this remarkable invention Belfast as a city has, however, only reaped the benefits which have been enjoyed by all parts of the civilised world owing to the headquarters of the industry being established in Coventry.

The present visit of the British Medical Association coincides with an epoch in our progress and history far more important and wide-reaching than those to which I have just referred. You do not find us gathered round the stocks to witness the launch of a huge record-breaking ocean liner, or watching the gradual evolution of a pneumatic tyre, but you discover us in the act of taking the first steps in the inauguration of a movement compared with which all other of our past achievements are to be considered as of minor importance. You see us gathered around the cradle of an infant university confronted by potentialities beyond the power of language to describe or of human thought to foreshadow.

THE NEW UNIVERSITY.

The problem of higher education presents at all times to the thoughtful mind a fascinating study, but on its purely literary and scientific aspects the present is not the occasion to dwell. The birth of a university brings at once to the mind of the medical man the serious consideration of the examination standards by which the new portal to the profession is to be guarded, and also the still more vital subject of the efficiency of the training and teaching to be carried out under its direct supervision. To the layman the event is of still greater importance; the medical student of to-day becomes the physician or surgeon of to-morrow, armed with his lifelong commission in the struggle for the relief of suffering and the prevention or cure of disease, and in his hands are often placed the issues of life and death. For these reasons every member of the community becomes interested in or involved more or less at some period of his existence in the efficiency of the institution which has presided over the training of his medical attendant. Hence no pains should be spared by the municipality or by the State to make this training as perfect as possible. Many people are apt to think, if they think at all, that the recognition of the medical man as a valuable public or national asset is an idea of modern growth, but you all remember that stirring episode in the *Iliad*, where Homer 3000 years ago makes Idomeneus exclaim, when commanding Nestor in the din of battle to fly to the relief of the wounded leech, Machaon, "when trembling Greece for her physician, feared":

> "Ascend thy chariot, haste with speed away;
> A wise physician, skilled our wounds to heal,
> Is more than armies to the public weal."

It behoves us as medical men periodically to review our position as regards the teaching and practical training of those desirous of joining our ranks, and upon an occasion like the present no more suitable subject could occupy our attention than a survey of the existing conditions of medical education, and a scrutiny of the requirements and modifications of these methods necessitated by the progressive march of scientific research as knowledge grows from more to more. I am confident that such a survey will also incidentally reveal evidence to satisfy the medical profession, as represented by this great Association, that our new university is fully alive to its serious responsibilities, and will be able to maintain the efficiency and to uphold the dignity of medicine in this portion of His Majesty's dominions.

THE HISTORY OF THE BELFAST MEDICAL SCHOOL.

The early history of medical teaching in any educational centre is closely identified with the growth of the facilities afforded by hospital accommodation. The first mention of any such institution in Belfast, according to the testimony of Dr. Malcolm, who more than half a century ago wrote the annals of the old General Hospital, is to be found in the appalling statement that in 1689 an epidemic raged throughout the north of Ireland, thousands of the stricken being crowded into "the great hospital at Belfast," which in the course of six months became the grave of 3762 victims. This institution was evidently a temporary one, and probably under military control, since no further mention is found of any form of organised medical relief till the inauguration of the Belfast Charitable Society three-quarters of a century later, followed in 1792 by the establishment of the Belfast dispensary system, and a few years later by the erection of the lying-in hospital and the creation of a fever hospital, the first institution of the kind established in Ireland.

The old General Hospital, which still stands in Frederick-street, was commenced in 1815 and opened in 1817, in the midst of a terrible epidemic of typhus, the victims being carried into the new buildings, whose freshly plastered walls were still dripping with moisture, and whose stairways had been scarcely rendered secure by the overworked carpenters and masons. During the first three years of its existence no fewer than 3527 patients were admitted within its walls. Malcolm dwells with pride upon this period of our local history, when he states that "Belfast presented a glorious spectacle of philanthropy deserving the admiration of the world. The prosperity of her later years is doubly blessed by the reflection that when but in the infancy of her strength she drained her dearest resources to help the desolate and afflicted, to dry the orphans' and the widows' tears, to feed the hungry and clothe the naked, and rescue a myriad host from impending destruction." It was during such a period of storm and stress that we learn of the first beginnings of the Belfast Medical School, when, in 1820, at the termination of the epidemic which had stricken one-fourth of the entire population, pupils were first admitted into the wards of the hospital to study disease at the bedside and to act as clinical clerks and dressers, in accordance with a resolution passed by the committee in 1817, just before the outbreak of the pestilence. (My auditors will therefore observe that in a few years hence the Belfast Medical School will be celebrating the first centenary of its existence.) This decision was the immediate outcome of the enlightened spirit which stimulated the founders of the charity when they deposited in the first stone, laid in 1815, the inscription dedicating the building to the advancement of medical science and the relief of suffering:

HOC NOSOCOMION
AEGROTIS ET ARTI MEDICAE
SACRUM.
IN SALUTEM PUBLICAM (ETC).

Not content with the mere admission of students to watch the practice of the medical staff in the wards, we find in 1826 that the committee were fully alive to their responsibilities, realising that clinical instruction must be for all time an obligatory portion of the duties of the physicians and surgeons. Accordingly, a systematic course of clinical lectures was commenced in the following summer, and these were most scrupulously persevered with, the lectures being delivered in the theatre of the hospital at least once a week to the whole body of students attending the institution during the winter and summer sessions. This practice, in addition to the bedside teaching, was continued for half a century, when the clinical instruction in many of the older teaching hospitals was often limited to desultory conversation around the bedside in the wards. The first theatre lecture of this systematic course was delivered by Dr. James McDonnell, a very remarkable man—an intellectual giant in his day—whose name is associated with every movement for the advancement of medical education and for the relief of suffering.

James McDonnell.

If any one name is to be singled out from amongst the founders of the Belfast Medical School, as we look backwards at the present momentous stage of our progress, it must be that of McDonnell. To him we owe the origin of the first hospital established in Ireland for the treatment of fevers, and to him is due the honour of founding the Belfast Dispensary. Malcolm relates how in times of the greatest apathy towards this, his favourite, project, when almost unassisted by an encouraging hand, he continued to tend and watch over it with fostering care and unabated interest until it had reached a vigorous maturity. He was the leading spirit in the campaign that called into existence the Belfast General Hospital. As an evidence of his marvellous energy and of the manysidedness of his colossal character, it may be mentioned that he was also the founder of the Natural History Museum, still standing in College-square and still doing duty as our only scientific museum for the education in natural history of the people of the city. There stands his splendid bust in marble, alongside the mummy of an early Egyptian dynasty, and some geological specimens gathered by his own hands or chiselled out by his faithful servant, Mike, who in his day enjoyed almost as large a degree of popularity as his worthy master. In the midst of his arduous labours in the interest of humanity McDonnell found time for the pursuit of original research, and contributed valuable additions to our knowledge upon the mechanism of the circulation. His work upon the variations in the pulse under diverse physical conditions and alterations in the body posture shows the remarkable originality of a mind capable at the same time of patiently accumulating enormous numbers of observations and rightly interpreting their physiological and clinical importance. Born in the Glens of Antrim in 1762, McDonnell graduated in Edinburgh in 1784 and lived till 1845.

Though systematic courses of lectures in anatomy, physiology, and chemistry had been delivered for some years in the Academical Institution, it was not till 1835 that the Belfast Medical School, started so modestly and unpretentiously in 1820, became firmly established. In this year

(1835) chairs of surgery, midwifery, and materia medica were added to those of anatomy and physiology and chemistry, and in the following year chairs of medicine and of botany were created, all in connexion with the Belfast Academical Institution, which with the General Hospital constituted the home of the Medical School up to the establishment of the Queen's College in 1849. The first list of professors appointed to these medical chairs contained the names of men some of whom have left an indelible impression upon the science of medicine. A brief glance at their achievements will show that from the moment of its birth the Medical School of Belfast was characterised by an originality of thought, an earnest and conscientious recognition of its high mission and an intense practical trend—qualities which stand out prominently in its subsequent history, and which still remain as its chief distinguishing features after almost a century's patient and noble service.

Thomas Andrews.

The first of these men was Thomas Andrews, born in Belfast in 1813. He practised as a physician actively and successfully and was one of the clinical teachers in the General Hospital up to the year 1846. Though he finally abandoned the practice of medicine for the profession of the theoretical chemist, we justly claim him as one of those who laid the foundations of our Medical School upon a thoroughly scientific base. Bringing his great intellect to the elucidation of clinical problems at a time when purely scientific methods were not often applied at the bedside, he gave a high character to the clinical teaching at the hospital, and adapted his lectures on chemistry all through his long occupancy of the chair at Queen's College to the students of medicine in a practical manner only possible to a teacher highly trained in clinical methods. His discovery and demonstration of the continuity of the liquid and gaseous states, his achievements in the domain of the liquefaction of gases, facilitated by his discovery of the critical point in their condensation, and his research work on the latent heat of vapours, on the heat of chemical combination, and on the qualities of ozone, have gained for him an imperishable name amongst the ranks of scientific discoverers.

At this university stage in our career I feel it my duty to pay a tribute to the remarkable foresight and fearless [illegible] of this great pioneer of medical education. He was [illegible] that nothing but the [illegible] niversity could meet [illegible] never lost a suitable opportunity of impressing his conviction upon those responsible for the state of higher education in the country. In 1867 he published his "Studium Generale," in which he urged powerfully the Government of the day to elevate Owens College, Manchester, to the rank of a university of the Scottish or German type, contending that the system of affiliating teaching institutions with a central university was fatal to freedom and intellectual progress, leading to "the degradation of all high mental culture whether scientific or literary."

Henry MacCormac.

The first occupant of the Chair of Medicine, created in 1836, was Dr. Henry MacCormac, father of Sir William, the late President of the College of Surgeons of England. He was born in 1800 and lived till May, 1886. In a short sketch of the life of this remarkable man, published in the Transactions of the Ulster Medical Society, I have contrasted his mental qualities with those of Andrews. From this obituary I may be permitted to quote a few sentences. His claim to a position amongst the immortals is not that of a discoverer, of a pioneer, or of a reformer. He belongs to the rarest group of medical celebrities—MacCormac was a seer. Many of us who knew him well are only now beginning to realise his remarkable prevision. He saw clearly, as only the seer can, things whose advent, if we yet see at all, we see through a glass darkly. Andrews found out new truths after most laborious though brilliant methods of research, not advancing one step until he had patiently satisfied himself of his data; MacCormac saw them afar off by means of some gift possessed by the few, but when he paused to reason upon the nature of the truth revealed to his subtle instinct he frequently erred. Andrews's results were the outcome of the exercise of rare reasoning powers, drawing safe conclusions from observed facts, and leading with scientific precision often to important advances in knowledge.

MacCormac in all fairness must be regarded as the father and originator of the open-air treatment of phthisis and scrofula. The unity of both diseased conditions, as well as that of the so-called white swelling in joints, was clearly realised by him at an early period in his medical career. In his work entitled "The Nature, Treatment, and Prevention of Pulmonary Consumption, and Incidentally of Scrofula," published in 1855 in London, Paris, and Leipsic, he dwelt with almost painful repetition upon the influence of impure or rebreathed air as a predisposing and a vital cause of tuberculosis.

I am conscious that in an address dealing with the history of our medical school and its present position as regards medical education I am travelling outside the track of my subject in dwelling upon MacCormac's claims as the man who first put into practical shape the open-air treatment of phthisis, which is to-day regarded as one of the most important advances in modern therapeutics. I do so because it brings home to us the greatness of a mind which for many years continued to stamp its original bent upon our medical school at the most impressionable stage of its existence. It is also, unfortunately, necessary to emphasise his claims to priority, since these have been somewhat lost sight of by the prominence given to the valuable labours of Hermann Brehmer.

Two years after MacCormac had graduated and commenced the practice of his profession Brehmer was born, and when his first work appeared in Berlin in 1856, a year after MacCormac's classic was published, he was only 30 years of age, though it must be acknowledged that his researches were independent and original, since we find that he had already established a small sanatorium in Görbersdorf in 1854. Writing in 1855 MacCormac states that: "For a long period of years I have, with an increasing fulness of conviction, discerned the undesirable results flowing from an ill-renewed atmosphere. I am perhaps the only physician of my time and standing, possibly the only one who is intimately and entirely convinced that consumption is not only when taken early very often removable, but, what is of still greater importance, that with proper means and appliances it is in every single instance preventable." The proper means and appliances he defines in the constant formula to be used by the rich and poor—namely, to sleep with their windows largely open, and to spend as much time as possible in the open air. For those already tuberculous he insists that there shall be a ceaseless, unlimited supply day and night, winter and summer, of pure fresh atmosphere in the apartment of the sufferer, his rule being that the chamber atmosphere must be as pure and untainted as the open air, in which the patient should spend as much time as his strength, the weather, the season, and his means will permit. These words, which I quote from his work of 1855, may be taken as containing every vital essential of the most modern method of treating this fell disease, and he emphasises the importance of a liberal supply of highly nutritious food. It is a somewhat sad reflection that the invaluable teaching of this genius of his day required almost half a century for its full fruition. In his own time, and as early as 1855, he complained "that whilst some complied intelligently with his suggestions, others treated every direction with indifference; but to cleanse the Augean stable was a very trifle compared with the difficulties encountered by him who would unmask a single prejudice, supersede a single habit, however hurtful and pernicious to his kind." I am addressing some individuals who are old enough to remember that upon more than one occasion Dr. MacCormac figured in the local police-court, being summoned by irate patients for smashing with his walking cane the panes of glass in the windows of the sick chamber when he found these hermetically sealed against the admission of the outer air, so profound was his conviction and so consuming was the fire of his zeal.

When our great Association next honours this progressive city by its presence I feel confident that one blot upon its fair name will have disappeared—a noble statue of this great physician, I trust, shall adorn one of our leading thoroughfares, testifying to our appreciation of his genius and our gratitude for his far-reaching labours in the interest of suffering humanity. There is an excellent marble bust of this venerable sage in the art collection of the municipal library, which can supply accurate material for an ornate monument, such as has already been erected in Germany to the cherished memory of Hermann Brehmer. No more suitable time could be chosen for the launching of such a worthy project than the present, when all Ireland has been awakened by the noble crusade against tuberculosis inaugurated by Her Excellency the Countess of Aberdeen.

Alexander Gordon.

In 1847 Alexander Gordon, the originator of the radial splint and clavicular apparatus, was elected to the Chair of Surgery in the medical school, whilst its home was under the roof of the Academical Institution, and he was transferred to the new chair established in Queen's College in 1849, upon which he continued to shed an ever-increasing lustre till his retirement in 1886, an unbroken period of almost 40 years. Gordon was a robust thinker, the bent of whose powerful mind was inventive or creative, though he was also one of the closest and most accurate observers of his day—a combination of intellectual qualities not often met with in medicine. Confining his mental activity mainly to the domain of fractures, whose etiology, pathology, and treatment he found in a condition of chaos, dominated largely by empiricism, he left it with its pathological problems and clinical signs reduced to order and its treatment based upon a purely scientific foundation. If we reflect for a moment upon the state of the literature of fractures at the lower end of the radius, the outer end of the clavicle, and at the neck of the femur, when Gordon commenced his studies it might be compared to the condition of a stagnant pool, which he transformed into a clear and crystal spring. A remarkable tribute to his genius and accuracy is afforded by the revelations of the Roentgen rays when applied to the elucidation of recent fractures, a method which has corroborated in many details his views, maintained fearlessly against a host of hostile critics. In a sense, less poetical than it may seem to some of my auditors, Gordon may be said to have forestalled the use of the X rays, his colleagues being often astonished at how, guided by his highly-trained sense of touch, his vision almost seemed to pierce through the skin and soft tissues to the position of the fragments in a swollen and œdematous limb. His lasting monument will be found in his unrivalled collection of fractures, to be seen in the pathological museum at Queen's University. The influence of Gordon's teaching in the class-room, in the operating theatre, and by the bedside in the wards of the old General Hospital was a powerful factor in the advance of the medical school, nor was his power due exclusively to his originality in thought and practice; few teachers ever held a more undivided sway over the hearts of their pupils than did this fearless and honest and pure-minded surgeon.

I am addressing many of Gordon's old pupils, one of whom —our local treasurer—loves to relate a striking instance of his originality, patience, and resourcefulness in overcoming apparently insuperable difficulties. No better illustration could be given of the genius of the great surgeon who so materially assisted in the building up of our Medical School during the middle of the last century. Early in his professional career he started to build with his own hands a small sailing boat. After the final completion of his task, and not till then, did he discover that his work of art, like the famous picture of the family of the Vicar of Wakefield, was too large to be removed through the door of the apartment in which it had been created. Nothing daunted, Gordon proceeded with his own hands to cut the small vessel in two, and, after its successful removal from the loft in which he had worked at it for several months, he conceived the idea of lengthening the boat. This he successfully accomplished by the insertion of a new central portion of considerable length between the divided ends of the original, thus foreshadowing the possibility of one of the greatest feats ever performed by the modern architects of our large ocean steamers.

Peter Redfern.

From the foregoing brief sketch of a few of the many master minds which moulded the character of our local school of medicine during the critical period of its early existence, before and immediately after the establishment of the Queen's College, we are led up to the advent of the illustrious teacher whose influence more than that of any other man consolidated its varied units and created for it a reputation which placed it amongst the foremost group of teaching institutions in the United Kingdom. Professor Peter Redfern in 1860 succeeded to the Chair of Anatomy and Physiology, first established by Drummond and afterwards occupied by Hugh Carlisle. The number of medical students attending classes in Queen's College at this time, though steadily rising from its opening in 1849, had only reached the total of 116. As the fame of the anatomical department under Redfern began to travel beyond the boundaries of the north of Ireland the numbers markedly increased, so that within a period of 15 years they had doubled, and in 1881–1882 the medical roll of the College contained the name of 364 students, whilst the hospital register showed those of some other senior men pursuing their clinical studies after having completed their collegiate courses. It will probably surprise many of my auditors to hear that for several years about this period our local school of medicine was the third largest in the United Kingdom, Edinburgh and Glasgow alone exceeding it numerically. Redfern continued to fill the double Chair of Anatomy and Physiology till 1893, when he was compelled to retire owing to the operation of the age limit, the Crown having previously extended his tenure of office beyond the regulation limit in just recognition of his exceptional services. He was succeeded in the Chair of Anatomy by Professor Symington, an anatomist of world-wide fame, so that our anatomical school has enjoyed an unbroken period of nearly half a century's pre-eminence.

It is a difficult task to do justice to the many brilliant gifts of Redfern as a teacher of anatomy. The accuracy and range of his knowledge, the fascinating lucidity of his expositions, his polished oratory, and the magnetic influence which he wielded at the dissecting table and in the class-room, are still cherished memories with his many old pupils occupying honourable positions in the profession throughout the world. But if there be a single gift or quality to which we are to attribute the secret of his successful career as a teacher, or as the founder of a school of anatomists, it must not be to any of those brilliant powers just mentioned. In him the quality of *thoroughness* developed into a master passion. Every department of his anatomical work was dominated by it; with him, as regarded the teaching of anatomy and physiology, "there existed not a trifle." He might well, with pardonable pride, point to the success of his life work in the report of the inspectors appointed by the Medical Council when they stated their opinion that the students of Queen's College, Belfast, were taught a great deal too much of anatomy, for he strenuously held that an intimate and practical acquaintance with the details of anatomy must ever prove to be the only solid foundation upon which a progressive science of surgery and medicine can be erected. Into his well-earned leisure and retirement he carries with him the reverence and the love of all his old pupils. Looking back upon the strenuous labours of his long life to give to anatomy the first place, in medical education, he may justly claim to be the real founder of our new and progressive local school of operative surgery, which bears the stamp of its great sire in its thoroughness, patient and scrupulous attention to every practical detail, and in its conscientious devotion to the ideal of the sacredness of human life.

James Cuming.

During the long term of Redfern's occupancy of the Chair of Anatomy the Chair of Medicine was filled by James Cuming, who died in harness in 1899. Some of my auditors will remember him as President of the British Medical Association when your great organisation visited Belfast in 1884—a memory, indeed, which almost overwhelms him who ventures to address you to-night. Would that Cuming's mantle, along with his memory, had fallen upon his unworthy successor to this honourable position! During his tenure of office as professor he was fortunate in occupying for 34 years the office of visiting physician to the Royal Hospital, where he was the colleague of Dr. James Smith, whose powers as a clinical teacher rarely have been excelled. As Smith's brilliancy at the bedside proved a valuable asset to the Medical School, so in those days Cuming's prowess in the class-room became soon no less generally recognised. He was the thorough master of an almost perfect literary style—the outcome of a lifelong and intimate acquaintance with the best writings in ancient and modern [illegible] is class-room expositions models o[illegible]ower.

It is [illegible] of the *personnel* of any medical school in the United Kingdom has ever excelled that of our own during the "seventies" and "eighties" of the last century, when the list of our teaching staff contained such names as those of Redfern, Andrews, Gordon, Cuming, and Smith.

Recent History.

Notwithstanding, however, the brilliancy of such a galaxy, the ill-advised and disastrous legislation which effected the dissolution in 1882 of the Queen's University of Ireland, and in its stead established the examination board known as the Royal University, immediately checked [illegible] Belfast Medical School and [illegible]wth of true academic life [illegible] Dublin. The numbers of [illegible] Queen's College, Belfast, [illegible] year 1888, when the [illegible] operation, these had [illegible] responding to about 40 per cent.

When all allowances have been made for normal fluctuations, it is gratifying to find that of late years the position of our Medical School has been steadily, if slowly, improving, especially when we reckon the increasing percentage of senior students who continue to attend the clinical instruction in the hospitals after having finally completed their academical courses in the lecture halls of the College. So that we now find ourselves at the commencement of the university stage of our existence with an average roll of about 270 students of medicine preparing themselves for their serious life work at the different teaching institutions in our city.

Clinical Resources.

The mention of these institutions brings me to a most important point. I need not remind my hearers that large and prosperous art and science faculties may flourish in a university established anywhere independent of the density of the population in its immediate vicinity. It is otherwise with an efficient medical faculty, as such cannot exist unless in a centre sufficiently populous to supply every hospital facility for the practical teaching of medicine and surgery and their allied specialties. It is conceivable that hospital facilities considered adequate for the wants of a medical department attached to an affiliated college might fail to meet the requirements of the medical faculty of a university, and it behoves us as a profession to inquire into the amount and nature of the clinical pabulum placed at the [illegible] wards of 3500 beds freely available for clinical instruction in Belfast, all of which from time to time during late years have been utilised by the students attending our Medical School. These are made up in the following manner:—

General Hospitals.—Royal Victoria Hospital, 300 beds (266 of which are at present occupied), [illegible] (122 of which are [illegible] 168 beds, Union [illegible] 45 beds, Ulster [illegible] Children's Hospital, [illegible]

Eye, Ear, and Throat Hospitals.—Clifton Street Hospital, 35 beds, Great Victoria Street Hospital, 25 beds.

Skin Hospital.—Clifton Street Skin Hospital, 32 beds.

Maternity Hospitals.—Townsend Street, 32 beds, and Extern Maternity (about in all 900 cases yearly); Ulster Hospital, 2 beds (and 6 gynæcological beds), with Extern Maternity (267 cases yearly).

Samaritan Hospital.—25 beds.

District Lunatic Asylum.—1000 beds.

If we scrutinise the amount of teaching material which flows through the great extern department of the Royal Victoria Hospital annually, every case being utilised for instruction, we shall find that the number of new cases amounts to about 30,000, representing an attendance of 90,000; these, with the attendances at the externs of the Mater Infirmorum and the various special hospitals, make a huge total of about 170,000 each year. It is obvious at a glance that the clinical and extern teaching facilities in Belfast are much more than sufficient to meet the demands of a medical faculty of the largest possible dimensions. All these teaching institutions are of quite modern construction, and as the members of the Association will have the opportunity of *seeing for themselves during the week*, the Royal Victoria Hospital is probably better equipped for purposes of clinical instruction than any other teaching institution of its size in the United Kingdom. In order that you may form some idea of how this great mass of varied clinical wealth is being at present utilised, it is only necessary for me to add that outside the large staff of university professors and lecturers there are physicians and surgeons and specialists to the number of about 60 engaged actively from day to day in the teaching of medical students at the bedside and out-patient departments of the charitable institutions provided for the relief of the suffering in our city.

Laboratories.

It is unnecessary to weary you with details regarding the staff of professors and lecturers engaged in teaching at the university *in the Faculty of Medicine*, most of whom are already known to you by their valuable contributions to the literature of medicine. Nor is there any necessity to dwell upon the series of splendidly equipped new laboratories—physical, biological, chemical, pathological, physiological, and pharmaceutical—which, through the indefatigable exertions of Vice-Chancellor Hamilton and the munificence of our citizens and of the late Sir Donald Currie, have been recently added to the university buildings.

I hope I have been able to satisfy you, from the history of our past progress and from the evidences of the amplitude of our present resources, that our new university starts upon its educative mission fully equipped for maintaining the best traditions and highest ideals of British medicine. But at the present critical stage in the progress of scientific medicine and surgery there lies, beyond the venerating of ancient tradition and the living up to stereotyped, lofty ideals of teaching, a more solemn duty imposed upon the responsible heads of every medical school and faculty of medicine in each university. This duty consists in the establishment of radical reform in the curriculum, urgently necessitated by the enormous accumulations of new scientific facts and theories; and it is at once obvious that the error of clinging to obsolete ideals is less pardonable in a young university than in an ancient medical corporation.

DEFECTS OF THE MEDICAL CURRICULUM.

This brings me to the consideration of the second part of my remarks—the present unsatisfactory state of medical education—a subject bristling with difficulties; but I shall only detain you for a brief period with the most important and pressing of these difficulties. All authorities agree that a medical curriculum which was planned 40 years ago is now entirely out of date, since at that time bacteriology was scarcely dreamt of; medicine, surgery, and gynæcology were in a rudimentary state contrasted with their present condition; sanitary science was practically non-existent, and it was then still possible to obtain a degree or diploma in medicine in less than a three years' period of study. I need not remind you that the stringent regulations of the General Medical Council of to-day render it impossible for the student of medicine to obtain his qualification to practise until after the lapse of a minimum period of five medical years, or 57 months from the passing of his entrance examination and registration.

The aim of the General Medical Council in prolonging the minimum period of study from four to five years was to enable the student to devote entirely his fifth year to clinical or bedside study in medicine, surgery, and the special departments, all of which had in the meantime increased enormously in complexity and importance. But the preliminary sciences—biology, physics, chemistry, and physiology—had also grown prodigiously, with the result that the additional year has been practically swallowed up in the study of these sciences or appropriated by the specialised teachers in these subjects. (As regards the teaching of anatomy, it is obvious from the enormous development of the final or practical subjects that the prominent place justly given to this subject, whose study occupied such a large proportion of the students' time, is now no longer possible as it was in Professor Redfern's day.) The outcome of the existing regulations is that the brain of the student failing to expand in assimilative power with the growth of advancing science, we have arrived at the crux so ably propounded by Professor Starling at the Sheffield meeting last year of getting two pints into the one-pint pot. The disastrous effect of the attempt to achieve this impossibility is seen in the rather startling fact demonstrated by the investigations of the General Medical Council, which prove that the mean or average time actually spent by the medical student in obtaining his degree or diploma is not the minimum period of 57 months, but one of almost 84 months, just falling short of seven long years by only three weeks. Nor is this, in my opinion, the worst evil of the many arising out of the working of the present ill-arranged curriculum of medical education. A considerable proportion of students, after failing in passing the examinations in the preliminary subjects of physics, biology, and chemistry, or before presenting themselves to the examiners in anatomy and physiology, proceed to attend the classes in the advanced or final subjects, and put in an attendance at the hospital with the one or two sets of examinations in these earlier subjects still hanging over their heads, which paralyse their capacities for obtaining anything like an efficient training in the subjects whose practice is to become their ultimate life work.

The evil of the system which permits such a course is fully seen in the cases of those students who only succeed in passing their examination in the intermediate subjects at a stage in their career when they have completed, or almost completed, their entire academic courses and hospital attendances, with the pernicious result that their last year before qualifying is entirely devoted to the grinder or spent in cramming the undigested contents of the various text-books to the total neglect of the invaluable mine of wealth available in the wards and the extern department of the hospitals, and which they had been merely able to tap in the preceding years of their study. After more than a quarter of a century's experience as a hospital teacher and as an examiner, embracing a practical acquaintance with the working of three universities in the United Kingdom, I feel constrained to believe that in the sending out of *men qualified immediately to enter upon the routine practice of their profession*, we are, in some respects at least, behind the results obtainable in the old days of apprenticeship.

THE REFORMS NECESSARY.

It is easier to point out the evils in the existing system of medical education than to suggest remedies for them, just as it is easy to diagnose a serious malady and often impossible to suggest a remedy for its cure. But, fortunately, the indications for treatment in the case of the more important of these evils are as clear as they are imperative. The preliminary and intermediate periods, amounting to three years out of the minimum of five years, must be shortened, and the clinical period of study must be increased if we are to train more efficiently, and turn men out of our teaching institutions properly equipped for their serious life work. How is this readjustment of the curriculum to be accomplished? Obviously an enormous aid to it would be a compulsory examination in experimental physics and chemistry at matriculation. Such an examination could never dispense with the necessity of a complete academic course in these subjects; it would ensure the student having some knowledge of the principles of both sciences from the start of his college work, and enable the average lad easily to pass his further examinations in them within a period of 12 months from matriculation. Already the old notion that the stage of school life should be entirely devoted to purely literary studies is showing signs of yielding to the urgent pressure of modern ideals, which demand that boys must be trained to observe and reason upon the operations of the natural forces continually manifesting their presence in the world around them. Owing, however, to the present unsatisfactory arrangements for the teaching of science in the majority of the secondary schools, little relief is to be immediately expected from this method of shortening the curriculum of the preliminary subjects, though we can confidently count upon a steady improvement in the amount of elementary scientific knowledge possessed by medical candidates presenting themselves for matriculation; hence our new university has wisely permitted physics and chemistry to appear in the list of optional subjects for the entrance examination.

It is manifestly out of the question that we should be compelled to wait for the universal introduction of science teaching in the public schools before attempting to shorten the curriculum in the preliminary medical subjects. Moreover, such a consummation, however devoutly wished for, could not be expected to aid us effectually in dealing with the still more important studies of physiology and anatomy. There is a growing conviction, amounting amongst those best qualified to judge aright in this matter to a consensus of opinion, that a prolongation of the period devoted to clinical studies can only be achieved (without unduly lengthening the entire curriculum) by *a radical change in the method of teaching the entire group of preliminary and scientific subjects.*

The crux of the question centres itself in the problem of instituting the desired reform without lowering the standard of the student's knowledge in these subjects. It would be a retrograde, and perhaps disastrous, epoch in medical education should each of our specialised teachers begin to realise that his own particular subject was not the most important one in the curriculum; but "Art is long and Time is fleeting," and, as Sir Felix Semon reminds us, "Technique is difficult." Were I placing merely my own convictions—the outcome of years of thought and observation—before you upon the urgent necessity of reform in the teaching of physics, biology, chemistry, physiology, and anatomy *to the medical student*, I would be overwhelmed by the feeling that I was treading upon dangerous ground, beset with many snares and numerous pitfalls; but the University of London has boldly declared for reform, and has decided that the teaching of these subjects must be conducted *with due regard to their bearing upon the special requirements of the student of medicine.* A fact which ensures the success of this great revolution is the pleasing one that the campaign is being led by the teachers of these sciences.

Professor Starling, a member of the Senate of the University of London, who occupies the Jodrell Chair of Physiology in University College, made the spirit of the new regulations clear at our last annual meeting in Sheffield. He said we must acknowledge that the present training in science received by the medical student fails in its end and does not make him scientific. The words of this great teacher of one of the intermediate subjects are so weighty they will bear repetition when he states "that from the very commencement of his medical curriculum the work of the student should be directed; every scientific subject which he studies, whether it be chemistry, physics, or physiology, should be considered only in its bearings on his future work as a medical man." I would venture to suggest that these words should be written in letters of gold and set up in the retiring-room of each teacher of the preliminary and intermediate subjects in our universities and medical schools, when soon we would cease to see the lamentable fiasco of the attempt to make every medical student an accomplished physicist, an analytical chemist, an experimental physiologist, a practical botanist, and an expert zoologist, as these phantoms dangle before his mental vision whilst he is already far advanced in putting in a vain and perfunctory attendance at his final classes, or whilst he is absent-mindedly sauntering about the extern department or wandering aimlessly through the hospital corridors. Professor Starling maintains that this "directed" method of teaching should also be applied to the subject of anatomy, where the minute knowledge which is insisted upon at the present time as regards the direction of muscular fibres, the insignificant markings on the bones, or the identification of fragments of human bones can have no bearing on the student's future work, even if he is to be an operating surgeon, and that all anatomy should be learned as surgical and medical anatomy. He believes that "by such a method, far from sacrificing the scientific training of the student, we would ensure that the whole of his science studies, preliminary or intermediate, would be built up with his clinical training into one compact scientific fabric—the science of man and his diseases."

The application of the principle of this applied or directed method of teaching is planned by the Senate of the University of London to reduce the former three years of preliminary and intermediate study to two years and a half, and the new arrangements even permit of this period, under certain conditions, being further reduced to two years. It is to be noted, however, that as the clinical part of the student's course is now to be fixed at three years there is, therefore, a lengthening of the entire curriculum from the minimum of five to five and a half years. Since, however, only a small percentage of students are able to graduate under about six years, it is confidently anticipated that by the better division of work the new arrangements will really shorten the entire period of study. These new regulations have come into operation in the London University during the present month.

Beyond all shadow of doubt, the time has fully come when a general and complete overhaul of the medical curriculum in all the universities and in every medical school in the United Kingdom is urgently necessary. There can also be little doubt that the reconstruction must be carried out upon the lines laid down by the University of London.

THE ATTITUDE OF THE QUEEN'S UNIVERSITY OF BELFAST.

The 20,000 members of the great British Medical Association have a right to ask what is the attitude of the Senate of the new Queen's University of Belfast regarding the programme of medical education. This is not a question whose interest is exclusively centred in the functions of the General Medical Council, since the honour, the efficiency, and the traditions of the profession are more or less influenced by the accession of each batch of medical graduates permitted to swell its ranks every spring and autumn through the new portal. Nor is it a subject of interest only to the members of the profession resident in Ireland, since a considerable proportion of our medical graduates, as in the past, will ultimately seek England, the public services, and our colonies as the spheres of their future life-work.

I rejoice at being in a position to give an answer to this question which can hardly fail to prove satisfactory. We have modelled our regulations regarding the medical curriculum upon lines somewhat similar to those inaugurated by the University of London, and being an entirely new university, absolutely untrammelled by any vested teaching interests, I respectfully but confidently submit that we have been able in some ways to improve upon the new regulations laid down by that august institution without, we believe, any lowering of the recognised standards of excellence. If we have been delayed till now in the realisation of our aspirations towards achieving university rank, the delay has enabled us from the start of our career to seize on the latest improvements and most advanced developments in medical education, which in recent years have been grafted upon the various and varied curricula of the older universities and long-established corporations in their attempts at keeping pace with the ever-swelling tide of medical knowledge. In the planning of our new curriculum we were most fortunate in having the aid of the supervision of one of the Commissioners of the University in Sir Donald MacAlister, the able President of the General Medical Council, in whose unique personality is combined the rarest business acumen with the most profound knowledge of the requirements of progressive medical education.

Though not presuming to state that my distinguished colleagues who teach the preliminary and intermediate subjects in the Queen's University of Belfast all go so far as to endorse in its entirety every view of the eminent professor in University College whom I have already quoted, I am justified in stating that they have always conscientiously and successfully aimed at directing the studies of the medical student from the point of view of his future serious vocation as far as our intimate connexion with the cumbrous and somewhat obsolete machinery of the now expiring Royal University permitted.

I shall not risk wearying you with minute details of the curriculum of our new university; suffice it to say that within a period of one year, consisting of one winter and one summer session, from matriculation the student can present himself for examination in all the preliminary subjects—experimental physics, chemistry (both theoretical and practical), and botany with zoology (both theoretical and practical). Within 12 months more he can complete his curriculum and examinations in anatomy and physiology, so that, if diligent and of average ability, he finds himself, before entering upon his third winter, completely free from study and from attendance upon all the classes of the preliminary and intermediate subjects, and privileged to give henceforth his undivided attention for a period of three whole years to practical clinical work and attendance upon the lectures devoted to the final subjects, whose practice is to constitute his life-work. By this judicious arrangement of his time and study the new university has thus been enabled to change the usual three years devoted to preliminary education, and the two years into which the clinical study had been squeezed, into two years of preliminary training and three whole years of clinical work. That this result is not obtained by sacrificing any of the time formerly devoted to the teaching of these scientific subjects is evident upon glancing at the calendar, which shows that during the first two years the student is compelled to attend no fewer than 16 separate courses of lectures, each course being of the usual length and consisting of the recognised number of lectures. The standard of excellence is maintained by arranging that the examination in each subject shall be conducted at the termination of each session, that the instruction given shall be in every possible way carried out on practical or experimental lines laid down upon the directed method already mentioned, in which the bearing of principles and facts are presented with due regard to the wants of the student and of the future practitioner of medicine. Whilst there is thus no danger of any lowering of the standard of scientific knowledge required of the student, ample provision is made for the maintenance of his clinical training at a high level by compelling him to avail himself for a minimum period of three years of the almost unrivalled hospital facilities at the command of the new university.

The spirit of thoroughness in which our curriculum has been conceived is further demonstrated by a regulation which prohibits the student's attendance upon lectures on the final subjects until he has passed his examinations in the preliminary subjects.

In conclusion, I trust that this necessarily fragmentary sketch of the origin, development, and progress of the Belfast Medical School under the master minds of its early teachers, whose present successors are determined to uphold its traditions and keep abreast of the tide of advancing knowledge, will carry the conviction to the minds of my auditors that a great and free university has arisen to shower its blessings upon our province, to carry the lamp of learning, and to bear upon its wings the balm of healing to the remotest parts of our colossal empire.

Address in Medicine

ON

PROGRESSIVE MEDICINE AND THE OUTLOOK ON TUBERCULOSIS.

Delivered at the Seventy-seventh Annual Meeting of the British Medical Association

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MR. PRESIDENT AND GENTLEMEN,—It is fitting that the first word this afternoon should be one expressive of my sincere thanks to the Council for the invitation with which they have honoured me [illegible] the annual meeting of the [illegible] request I am sensible of [illegible] compliment, which is implied. As years go by the choice of a subject does not grow easier. The immensity of the field constitutes an increasing difficulty.

Turning the matter over soon after the invitation reached me, I chanced to pass my old school, left, almost to a day, 35 years ago. It occurred to me that, in place of attempting to project a bird's-eye view of medicine as a whole, it would be well to limit attention to one department which illustrates in striking fashion the extraordinary revolution of [illegible] in little more than a generation. [illegible] of modern medicine on [illegible] the choice. No subject in medicine has wider interest. No assembly can appraise, as this great Association can, its significance and magnitude. You know its difficulties and have to face them every day. I am influenced, too, by the fact that the Association meets this year in Ireland, where, thanks to the admirable energy of Her Excellency the Vice Reine and the generous coöperation of the medical profession, a great antituberculosis movement is in progress. Nor can I forget the striking part played by the city of Belfast in times gone by through the remarkable labours and writings of Dr. Henry MacCormac, and in more recent times by those who are yet with us.

RETROSPECTIVE.

To give greater precision, let me divide the 35 years into five lesser periods of seven years each. The first period (1875-81) was one of darkness and fog. The great work of Laennec and Louis was threatened with eclipse. The unity and specificity of the tuberculous process were obscured. Terminology was vague and inexact. Tuberculosis of the lung was labelled catarrhal pneumonia, with three stages of congestion, consolidation, and excavation. A "neglected cold" played a chief causal rôle. The hopelessness of therapeutics was depressing. Here and there appeared glimmering of light. Experimental research on the earlier lines of Villemin presaged the dawn.

The commencement of the second period (1882-88) saw the advent of daylight. Koch's announcement to the Physiologische Gesellschaft of Berlin, on March 24th, 1882, came like sunrise to a sleeping city. The discovery of the tubercle bacillus inaugurated a time of Sturm und Drang—the strife of critics and opposing doctrines. The tremendous significance of the brilliant discovery could not be realised at once. Time was needed for the correction and adjustment of older views. Research had to develop on fresh lines. The character, life-history, properties, and morbific activity of the tubercle bacillus were studied by a host of observers. The conception came gradually—not an absolutely new conception indeed—that tuberculosis, notably pulmonary tuberculosis, must be given a place among infective diseases. The old feeling after truth, which led the Italian and Spaniard almost a century before to pass enactments prescribing preventive measures against tuberculosis, was found to rest on scientific fact. Gradually there emerged indications of a larger outlook towards prevention.

During the third period (1889-95) observation and research were pursued with increasing exactness and better result. The period is remarkable because of two events: (1) the announcement of tuberculin; and (2) the more general adoption of the doctrine of aerotherapy, a doctrine promulgated long ago, but little apprehended or applied. The intimation by Koch in 1890 that he had obtained in tuberculin an agent of specific value in the diagnosis and treatment of tuberculosis was an event only second in importance to the announcement of the bacillus itself. It needed years, however, to enforce the conviction that tuberculin, which was received with mingled criticism and almost hooted from the stage, embodied a principle of the greatest significance to medicine.

The fourth period (1896-1902) saw the more rapid spread of antituberculosis activity throughout the civilised world—the increasing determination of scientific, social, and, to some extent, official effort towards the tuberculosis problem. While experimental research was pursued with keenness, men's minds were awakened to the large issues of preventive medicine. This was the time of more general development of the sanatorium. The tuberculosis dispensary, inaugurated in the "eighties" as a centre of antituberculosis operations, aroused attention. Notification was admitted as a practical measure. Tuberculosis associations were founded in different centres. Conferences and congresses began to be held. The commencement of the twentieth century found the subject pretty much in the air.

The fifth and last period of seven years (1903-09) is remarkable for the development of larger views on immunisation and the appearance of the opsonic doctrine and its application to therapeusis as a means of directing vaccine-therapy. Diagnosis has been made more exact by various adaptations of tuberculin. This is also the period of more rapid evolution of preventive measures. The physician and the sanitarian have joined hands, and have been aided not a little by thoughtful social workers who recognise the vast part played by tuberculosis as an agent of national devitalisation and impoverishment. The nations of the world are falling into line. Repeated international congresses have borne excellent fruit. With exchange of ideas endeavour has become better directed and more uniform. The significance of organisation and coördination of effort is gradually being appreciated. Administrative control is taking practical shape. And so the great work goes on.

PRESENT POSITION AND OUTLOOK.

To-day I invite you to pause for a brief hour and think what the discovery of the tubercle bacillus has meant to medicine and to the world, and what it may mean. Nor deem this a trite or exhausted subject. I hope to succeed in showing that, great as have been the advances already made, still greater are the possibilities which the discovery implies. Consider the matter more closely. The determination of the essential cause has called order out of chaos. It has thrown to the winds the vague, nebulous talk of dualism which long perplexed medical science. Tuberculosis, however various its aspects, is one indivisible entity, dependent essentially on the presence and activity of one organism. Behind the changing pathological and clinical appearances the tubercle bacillus remains single and constant.

[Here Dr. Philip criticised the usually adopted nomenclature and classification of tuberculosis as being too anatomical, and not taking into account systemic manifestations, and continued :]

DIAGNOSIS AND PROGNOSIS.

The discovery of the tubercle bacillus in the patient's expectoration affords bacteriogical proof of tuberculosis. This is incontestable evidence. It is the evidence which we seek for in dead tissues. But from the physician's point of view much more is needed. In the first place, if he wait for the appearance of the tubercle bacillus in the discharge he waits too long. The occurrence of the bacillus in the expectoration signifies a tuberculous invasion which has made considerable advance. The disease has progressed far before it takes the form of a discharging lesion. The physician's duty is to conclude the diagnosis prior to this. Further, the detection of the bacillus in the discharge, or the determination, by one or other of the more recent bacteriological tests, that the patient is tuberculous, yields but a partial diagnosis from the standpoint of prognosis. Unfortunately the present tendency is to say, on the one hand: Given no tubercle bacillus in the discharge, we may not diagnose the condition as tuberculosis; and, again: Given the bacillus in the discharge, the diagnosis is one of tuberculosis, and there's an end of it. But *quâ* prognosis, much more is needed.

In respect of early diagnosis and the completer diagnosis on which are based both prognosis and treatment, the physician has methods of determination beyond those of the laboratory, which can be refined and perfected only by careful, patient, and prolonged study at the bedside. The physician, while making use of all bacteriological advances as aids to diagnosis, cannot afford to forget that there is evidence imprinted on the patient's every tissue and organ which, when read by the seeing eye and interpreted by the trained senses, gives completeness of view otherwise unattainable. The physician is primarily the thoughtful observer of Nature. Familiar with the features of healthy activity as these manifest themselves in every organ, he becomes quick, by repeated observation of disease, to catch the first slight deviations which indicate that the physiological has become the pathological. In illustration, let me cite a simple case.

Some years ago I was asked to see a young lady suffering from pulmonary tuberculosis, who was extremely ill, indeed almost moribund. There was little to be done. In passing downstairs from the sick room I happened to meet a bright girl with whom I exchanged a few words. After expressing an unfavourable opinion regarding the patient, I ventured to ask who the girl was whom I had met on the staircase. To the reply that it was the patient's younger sister, I suggested we should direct treatment to her. The immediate rejoinder was: "But there is nothing wrong with her." I heard no more of her for 20 months, when I was asked to see her on account of pulmonary tuberculosis. The doctor in attendance reminded me of the previous incident and indicated that the girl had "kept well" till a fortnight ago, when [illegible] of expectoration sent to the laborat[illegible] tubercle bacilli. Examination of the [illegible] ·eral disease and pronounced systemic [illegible] moment to the patient had slipped by during which the disease was slowly making way. It was only when the lesion came to be a discharging one that the suggested diagnosis of 20 months before was seriously considered. In spite of speedy adoption of treatment, and a brave fight on the part of the patient, she died. Had treatment been instituted at the earlier date the unfortunate issue would probably not have occurred. Such incidents are of frequent occurrence.

The extent to which faith is limited to the bacillary diagnosis is serious. I have before me a letter from a bacteriologist who, at the request of a throat specialist, had received a specimen of sputum from a patient in whom, to my knowledge, the diagnosis of pulmonary tuberculosis had been made six years ago, and who had done remarkably well. The writer reports that he found the patient discharging "a very large number of tubercle bacilli, which indicated that it was an advanced and progressive case of phthisis but still not hopeless." It is clear that neither the unfavourable verdict nor the subsequent reassurance, coming from one who had never seen the patient, can be admitted as of much value. What I am anxious to urge is, on the one hand, that the bacteriological diagnosis comes frequently too late, and in any case should not be waited for without an estimate of the results of every other method of examination, and, on the other hand, that the bacteriological diagnosis is much too narrow an issue on which to base prognosis in a given case. While, broadly speaking, the presence of a large number of tubercle bacilli in the discharge points to a considerable focus of disease, the actual number *per se* is not a sufficient gauge of the stage or gravity of the case. To the trained clinical eye there are a score of other points which must be appraised in order that the diagnosis may be of prognostic value.

TUBERCULIN IN DIAGNOSIS.

The subcutaneous injection of tuberculin, as first proposed by Koch, is occasionally of much value. There occur every now and again in the experience of the best clinician cases where the symptoms, physical signs, and clinical course are difficult of interpretation—cases where the possible presence of tuberculous disease means too much to the patient to justify doubt or delay. In such instances the use of tuberculin is clearly indicated. Resting on an opinion formed by a persistent use of the method since its first introduction, I can testify to its value and its freedom from risk. There are also available more recent adaptations of tuberculin diagnosis, which include the cutaneous, percutaneous, and ophthalmic tests. These have a wide range of application. Perhaps the most generally serviceable is the cutaneous. The percutaneous is a simple modification of this, in which the skin remains unbroken. The ophthalmic or conjunctival has similar application where there is no contra-indication because of existing eye disease.

These methods, which are readily carried out, yield convincing evidence as to the presence or absence of tuberculosis in the given *individual*. They do not, of course, afford certain proof—although the presumption may be present—that the *particular symptoms or lesion* under consideration are of tuberculous origin. They justify the diagnosis that the individual has tuberculosis, while they leave the localisation of the lesion to other means. In this sense the cutaneous and ophthalmic tests are commonly less conclusive than the subcutaneous. On the other hand, the former are often preferable. Thus they may be preferred when the point to be determined is the general one, Is the patient tuberculous? They may be preferred—especially the cutaneous—when the hypodermic method might be objected to either by the patient or his friends or when the character of the lesion makes subcutaneous injection undesirable. The external methods—and in most cases the cutaneous—are preferable when an extensive test involving many individuals is undertaken, as in a public institution, for the purpose of determining the amount of tuberculosis present. In respect of all these tests it is unfortunate that, while they commonly indicate with remarkable certainty the existence of a tuberculous lesion, they fail to discriminate, so far as present methods go, between lesions of comparatively old and quiescent character and commencing lesions of aggressive nature. They fail also to detect some of the worst cases, notably disease rapidly advancing towards a fatal termination.

ETIOLOGICAL RELATIONSHIPS OF CHILDHOOD.

From the larger point of view we are much indebted to tuberculin for convincing evidence of the vast frequency of tuberculosis. Of paramount importance is the conclusive testimony it bears as to the frequent occurrence of tuberculosis in children. Its use has confirmed in remarkable fashion estimates, concluded on other clinical grounds, which have sometimes been criticised as excessive. Thus conclusions published by me, which showed that of groups of school children from 6 to 14 years of age no fewer than 30 per cent. presented stigmata of tuberculosis, have been thought extreme. Yet observations by means of the cutaneous test go to show that such conclusions are within the mark. Much evid[illegible] the point. In the absence of [illegible] scale from London or other great [illegible] continental observations. Statistics from the city of Vienna are available which deal with large numbers of children. They include (A) cases examined post mortem, and (B) cases tested with tuberculin. The figures are as follows:—

[illegible] were found to be [illegible]

Group I.	(1st year of life)	showed	15	per cent.	tuberculous
,, II.	(2nd ,,)	,,	40	,,	,,
,, III.	(3rd to 4th year)	,,	60	,,	,,
,, IV.	(5th to 6th year)	,,	56	,,	,,
,, V.	(7th to 10th year)	,,	63	,,	,,
,, VI.	(11th to 14th year)	,,	70	,,	,,

(B) Tuberculin results:

(*a*) Of 988 consecutive patients coming to hospital and tested by cutaneous method (von Pirquet).

Group I.	(as above)	showed	16	per cent.	positive.
,, II.	,,	,,	24	,,	,,
,, III.	,,	,,	37	,,	,,
,, IV	,,	,,	37	,,	,,
,, V.	,,	,,	57	,,	,,
,, VI.	,,	,,	68	,,	,,

(*b*) Of 509 consecutive patients in hospital for diphtheria, scarlet fever, and other acute infections (except measles), tested cutaneously, and in case of doubt subcutaneously (Monti and Hamburger), 271 were positive, that is, circa 50 per cent. Or, taking them in groups.

Of Group I.	(as above)	undetermined.		
,, II.	,,	9	per cent.	were positive.
,, III.	,,	27	,,	,,
,, IV.	,,	51	,,	,,
,, V.	,,	71	,,	,,
,, VI.	,,	94	,,	,,

It is to be kept in view that the figures quoted are based on investigations among children of the poorer classes, and refer to tuberculous *infection* and not to clinically determinable *illness* merely. For the present we are concerned with the actual *distribution of tuberculosis* throughout large communities. It is also to be understood that the conditions pertaining in Vienna and correspondingly the incidence of tuberculosis are not strictly comparable with those in our own large towns.

None the less, collective evidence from many sources emphasises the view that it is especially in childhood that the tuberculous seed is sown. Tuberculosis is an all-pervading blight. Its occurrence would seem traceable largely to the nursery, or at least to the period of childhood. The German saying, "Am Ende hat Jedermann ein bischen Tuberkulose," might in the light of modern observation almost read, "Tuberculosis is commonly contracted in childhood." The significance of this can hardly be exaggerated. The frequency of tuberculous infection in childhood explains much which previously gave rise to endless speculation. If we modify slightly the doctrine of heredity which formerly held sway and ally it with that of the survival of the fittest, we shall come near to the truth. Heredity means not transmission of the disease, but of tissues which are extra liable and extra vulnerable. The widespread distribution of the disease and unhealthy environment mean the probability of infection in less or greater degree. The more liable tissue becomes more certainly infected, and the more vulnerable tissue suffers in greater degree. The less liable may escape altogether, and the less vulnerable resist successfully.

If the conclusion which seems forced on us be correct, that in a majority of instances infection occurs in childhood, we are faced with a problem of totally different complexion and proportions from that which was previously conceived. To solve it we must search for causal conditions in the life of the child. It is impossible on the present occasion to condescend on details as to channels of infection. Suffice it to say that prolonged observation has led me to conclude that inoculation may occur by way of the mucous passages at any point from the mouth and nostril downwards. I believe this is especially frequent in the naso-pharyngeal, tonsillar, and faucial regions From the point of entrance there is usually a slow dissemination by way of the lymphatic circulation. The factors essential to invasion are devitalisation of the tissues and the presence of the bacillus.

In answer to the query, Where does the bacillus come from? it is natural and tempting to trace infection in childhood chiefly to infected milk-supply. But do the facts bear this out? Tuberculin tests show that tuberculosis is relatively less common during the first two years—when, if milk were the chief agent, we might expect it to be greater —and evidence of infection becomes progressively common as age advances. The facts of comparative ethnology tend also to qualify the view. For tuberculosis flourishes abundantly in not a few countries where feeding with milk from cows or other animals appears unknown. I am assured by numerous competent observers abroad that tuberculosis abounds in districts where the use of milk for alimentation is unknown. The extent to which tuberculosis depends on the ingestion of bacillus-containing milk remains, therefore, a moot point. It seems rather as if some other cause were operative—a cause common to home and school life. The incidence of pulmonary tuberculosis shows a steady increase as the child grows. The ratio of increase is greater about the time the child goes to school. One morbid influence seems constant throughout the progressive stages of the child's life—namely, the comparative withdrawal of the developing organism from the natural and healthful stimulus of the open air. The facts appear to point conclusively to the relatively airless conditions of home and school life as a chief etiological factor. This view is corroborated by observations made under the system of domiciliary visitation which forms a leading feature in the activity of the Victoria Dispensary for Consumption. Under the system the home of every patient coming to the dispensary is systematically inspected by nurse and doctor. In addition to inspecting the house the doctor holds a "march past" of the household, so that other cases of infection may be detected as early as possible. The frequency with which several members of a household—it may be half a dozen children—are found to be concurrently affected is striking. There is a remarkable coincidence between the airlessness of the house and the frequency of disease. Sometimes every member of the family presents stigmata of the disease. Such homes are veritable "nests" of tuberculosis.

In this connexion I venture the suggestion that it is to the extensive distribution of tuberculosis in childhood that we must trace the frequency of the graver symptoms and complications which occur in such infections as measles and whooping-cough. The more carefully we have regard to complete diagnosis, the more frequently will it be found that tuberculosis lurks behind the more acute illness. It is often stated that pulmonary tuberculosis occurs as a *sequela* of measles and other infections. Are there not grounds rather for believing that such infections tend to assume the graver character because of *pre-existing* tuberculosis? Do not such infections frequently arouse into activity a pre-existing tuberculosis? Tuberculosis is, I believe, to be credited with a much greater proportion of mortality in childhood than is usually conceived, and is largely responsible for the aggravated manifestations of otherwise simple ailments.

TUBERCULOSIS IN COMMUNITIES.

Turning to the occurrence of tuberculosis in the community generally, I may recall calculations made a number of years ago as to the ratio between mortality and incidence of pulmonary tuberculosis. These led me to the conclusion that the mortality within a district might safely be multiplied by ten to express the number of cases of pulmonary tuberculosis worthy of medical surveillance, and I suggested that this number might be further increased without exaggeration. Subsequent observations have confirmed the belief that the estimate, far from being excessive, errs probably on the low side. The results obtained by means of the newer methods of diagnosis are strongly corroborative. If we reckon not merely patients who are so evidently ill as to require medical supervision, but the entire number of persons who give a positive reaction to tuberculin, the sum total is vastly greater. Such facts have a very practical bearing on prevention and treatment. They testify to the tremendous grip which tuberculosis has obtained on the race and its immense ramifications throughout the social organisation. They emphasise the significance of measures directed to the better sanitation of dwellings and schools as well as workshops, offices, &c. They illuminate and illustrate the housing question—using the phrase in the widest sense—as nothing else could do. No less do they accentuate the great need which exists for an organised and coördinated plan of operations in relation to tuberculosis as it occurs in our social communities. With so great a mass of tuberculous material to handle we cannot afford merely to wait and treat individual patients as they happen to present themselves at out-patient departments. We must search for them in their hiding-places. We must track them to their breeding-grounds.

Towards this end *concerted action* is desirable. We must obtain all available information as to the distribution and spread of the disease with a view to its prevention and eradication. This is the justification of notification. Much more is needed. Approaching the matter from the standpoint of the pathologist, I was led some 22 years ago to propose the establishment of the Consumption Dispensary as a central institution which should concern itself with every aspect of the tuberculosis problem, and would have regard especially to the patient's home conditions in relation to his own treatment and the limitation of the spread of the disease throughout the household. By the continuous activities of the tuberculosis dispensary and the system of domiciliary visitation to which I have alluded, there is maintained a ceaseless campaign and successful raid on the disease. If properly worked, there will be accumulated a remarkable mass of information regarding tuberculosis in the given district. Thus, in Edinburgh, the activities of the Consumption Dispensary have tended to the completion of a satisfactory plan of antituberculosis operations, which includes compulsory notification, a sanatorium for early cases with approximately 100 beds, a working colony, a hospital for advanced and dying cases with 62 beds, in addition to suitable and extensive accommodation for patients of the pauper class under the Poor-law authorities. The several factors in the scheme are on terms of intimate relationship and coöperation. The scheme is closely related to the municipality through the medical officer of health, and by many links to the Charity Organisation Society and other such agencies. As illustration of the significance to the community of such concerted action, it is noteworthy that while during the first ten years of the development of the scheme, when its activities were more restricted, the mortality from pulmonary tuberculosis in Edinburgh fell 12·8 per cent., in the succeeding ten years (1897–1906) the mortality further fell to the extent of 42·1 per cent. Without tracing this remarkable drop entirely to the activities of the system it seems fair to interpret these as chiefly contributory to the result.

The further goal towards which all effort is directed is the recognition by the State and the various administrative bodies concerned that tuberculosis is a social evil, the existence and effects of which call for consideration and active interference. The change which has come over the official attitude of the country is eminently satisfactory. So far as England is concerned, the most significant indication is found in the fact that last year there was issued by the Local Government Board an order calling for the notification of all cases of pulmonary tuberculosis occurring in patients under the Poor-law. In Scotland an advanced position was taken some years ago In a Memorandum dated March 10th, 1906, pulmonary phthisis was declared by the Local Government Board of that country to be an infective disease within the meaning of the Public Health Act and the various elements in what may be described as the Edinburgh scheme were recommended as collectively forming the basis of a national scheme of antituberculosis measures. Ireland, thanks largely to the attitude adopted by her Local Government Board, is in possession of a Tuberculosis Prevention Act, which became effective on the first of the present month, and which gives her potentially the entire machinery for a complete and effectual campaign. These are striking indications of ripening opinion. Taken along with the wider public health enactments which have been a conspicuous feature of recent legislation, they afford a gratifying promise for the future.

THERAPEUTICS

Let me invite you to consider briefly two aspects of treatment. The first of these has no direct relationship with the tubercle bacillus—namely, aerotherapy. The second depends essentially on the bacillus—is, indeed, the outcome of our growing acquaintance with that and other organisms. I refer to tuberculin and vaccine-therapy.

The Great Principle of Aerotherapy.

Although, as the cynic may remind me, the great principle of aerotherapy dates from the Garden of Eden, somehow as time went on the principle ceased to be followed save by a few. The experience of the past two decades has greatly influenced the medical attitude towards aerotherapy. Its methods have gained an assured place in therapeutics. We have come to recognise from a comparative study of pulmonary tuberculosis as it occurs throughout the world that *it is not a disease of any one latitude or* climate. The fallacy which in the popular, and perhaps also in the medical, mind associated consumption particularly with these islands has been exposed. The relative infrequency of consumption in England and Scotland as contrasted with other European countries has not only contributed to dissipate ignorance as to its etiology, but tended actually to a reversal of the conception that climatic conditions have to do with its production. The pioneer work of the earlier sanatoriums in this country led rapidly and certainly to the conclusion that open-air treatment was a method of universal application. Facts and statistics have speedily accumulated which go to show that tuberculosis results chiefly from the exclusion or insufficient supply of fresh air in the dwelling-room, workroom, and other haunts of man, and, further, that in proportion as the supply of air and sunlight is improved, under better conditions of sanitation, there follows a corresponding reduction in the mortality from tuberculosis. Not only this, but there is abundant evidence that open-air treatment is successful in proportion as it is carried out completely, in winter no less than in summer. Indeed, there is not wanting support for the belief that the results obtained under open-air treatment are fully better during the colder than the warmer months of the year. Nor is it too much to contend that the application of aerotherapy has completely changed the clinical features of pulmonary tuberculosis. Under proper aerotherapeutic conditions the classic type of disease, as described from generation to generation in the past, has ceased to be The aspect of the patient is metamorphosed. The delicate pink-and-white colouring or the hectic blush usually described is frequently replaced by a ruddy look. *Pyrexia disappears* marvellously. Within a short time temperatures which have been swinging for weeks tend to become normal. The rapid pulse is slowed and blood pressure increased. Night sweating is practically unknown. Cough quickly lessens or disappears and expectoration is correspondingly reduced. Appetite picks up and digestive disabilities disappear. Lassitude and disinclination for effort, physical and mental, pass away, and the patient becomes once more keen and fit for [illegible] His entire physiology returns [illegible] tion of the consu[illegible] treatment on aerotherapeutic lines, sounds exaggerated and false. The brilliant results achieved under aerotherapy in the arrest of what seemed hopeless conditions of disease afford encouragement for the wider adoption of open-air measures with a view to prevention. It is remarkable how far prevention lags behind treatment. What is capable of effecting the cure of definite tuberculosis is *a fortiori* capable of preventi[illegible] this in theory, but the [illegible] hearted and faltering. This [illegible] we have a constant object-lesson in the relatively low place which England and Scotland occupy in relation to tuberculosis mortality as compared with other nations. There *is little doubt that this finds its explanation in chief* part in the habits of our people, their love of outdoor sports and the like, and in the continuous and steady amelioration of housing conditions from successive enactments which have been passed during three-quarters of a century. The history of medicine abundantly shows that where therapeutic procedure is based on physiology the methods of application are simple and direct. This is conspicuously true of aerotherapy. The accumulated experience of recent years has established three general propositions of much significance.

1 Aerotherapy is a measure of universal applicability in all lands. There is no climate specially favourable for its practice. The advantage of brighter, warmer climates lies chiefly in the greater *facility* and comfort with which *it may* be carried out Open-air treatment seems more natural when the sun is shining. On the other hand, in warmer climates there are inherent difficulties to the carrying out of the system all the year round. It may be doubted whether any climate, taken as a whole, is more suitable for the purpose than that of the United Kingdom.

2. Aerotherapy is of universal applicability in every sick room. It is not a special system to be practised in special institutions. It is utilisable in the bedroom of the ordinary dwelling as certainly as it is in the ward of a special hospital. Although more conveniently carried out *in the sanatorium, it may be used no less completely* and effectively in the ordinary dwelling house if only the principle of application be rightly apprehended. There is no need to send patients to sanatoriums *merely* on this account. Sanatoriums have their uses. They are serviceable, especially in the interest of patients who, for one reason or another, *cannot have a proper régime maintained in their own home.* But even the poorest—and still more easily the well-off patient—can enjoy the advantages of aerotherapy at home. This is a significent admission because it carries with it the further important conclusion that a sanatorium does not require, in order to be effective, to be erected in an inaccessible place, removed, it may be, a hundred miles from the centre of population which it especially serves. Many mistakes have been made in regard to this in the past. Much unnecessary expenditure and inconvenience have been caused. If a sanatorium is established for the poorer classes of a town it is eminently desirable that, while it should be removed to a sufficient distance to protect it from smoke and dust, it should still be sufficiently under the eye of the citizens to constitute from day to day an object-lesson in the application of aerotherapy.

3 Aerotherapy, while especially indicated in tuberculosis, is a measure of widest applicability in relation to disease. It is a mighty principle of treatment both from the curative and from the preventive point of view. I have already alluded to the remarkable change in type which occurs in pulmonary tuberculosis when treated on open-air principles. No less striking is the absence of complications as compared with their frequency under the protective method Throughout 15 years of constant experience of aerotherapy in the *Royal Victoria Hospital for Consumption I have watched* closely for the occurrence of pneumonia, or pleurisy, or bronchitis, and have failed to meet them. Their absence from a considerable community, all of whom have already weakened lungs, is singular [illegible] there has never been an outb[illegible] it is the rarest occurrence to [illegible] duty even for a day. It would seem, indeed, that the application of aerotherapy is without limits, provided reasonable care be taken to preserve the warmth of the body. We are only awakening to the full significance of this great cleansing, antidotal, and vitalising principle whose applicability in medicine is no less far-reaching than that of *asepsis in surgery. It was a far-seeing, clear-visioned poet* who wrote—

> "Air, air, fresh life blood, thin and searching air,
> The clear, dear breath of God that loveth us.
> * * * *
> Water is beautiful, but not like air."

The progress of surgery within *recent times is sometimes* contrasted with that of medicine to the disadvantage of the latter. It is worthy of note that the remarkable developments of modern surgery are the result of the application of one or two great principles which may be described as medical rather than surgical. The two principles which have revolutionised surgery—namely, anæsthesia and asepsis—have allowed the surgeon to proceed fearlessly, leisurely, and without risk of interruption or complication to the completion of operations which otherwise were impossible. In like manner, it seems to me, the adoption of aerotherapy as a basis of treatment brings the physician to a vantage ground in respect of therapeutic possibilities from which he is debarred under the more protective system. Let me urge that to place a patient suffering from pulmonary tuberculosis under the influence of aerotherapy is not synonymous with the adoption of expectant treatment. Aerotherapy is, in the *truest sense, a therapeutic* measure which has *been* found capable of giving the **best** results.

was regarded as one of the most dangerous undertakings possible. Nowadays, although we look upon all intestinal work as demanding the greatest pathological knowledge, technical skill, and judgment, we know that it can claim an ever-increasing measure of success. One of the first reasons for this progress lies in the fact that we have now ever clearer conceptions of the functions of the peritoneum. When the abdominal cavity first became accessible to surgical interference our conceptions of it were dominated by the idea that its lining was one of the most vulnerable points in the whole body. But soon after came the gradual recognition of the wonderful powers of repair possessed by the membrane when unsoiled by septic matter. Perhaps no one did more to demonstrate this even before our era than the father of abdominal surgery, Spencer Wells. And we must not forget that this was in spite of the fact that much of his work was done before the acceptance of the Listerian *régime*. With the advent of the antiseptic era and the general improvements in results achieved, the conviction was forced upon the surgical mind that many of the successful cases of abdominal section which had recovered anterior to it could not have been performed under anything approaching ideal aseptic conditions. In other words, it seemed clear that if (as was almost positively the case in many of the earlier operations) a certain amount of infective matter must have been left behind in the abdomen after procedures where recovery followed, the peritoneal cavity surely possessed some, then unknown, power of tolerating a certain amount of septic material for a time and ultimately removing it completely. This conviction was strengthened more and more as the pathology of so-called appendicitis (to mention no other lesion) began during the same period to be better understood, and its clinical history to be more closely followed with and without operation. With the knowledge that this disease was an infective peritonitis starting from the vermiform appendix, it became abundantly clear that unless the peritoneum possessed the power of disposing in some way of very considerable quantities of septic matter no case of *acute* appendicitis could possibly recover. And yet it soon became obvious that many such cases did get well without any operation even after severe peritonitis. Moreover, this led to much greater hopefulness about all surgical interference within the abdomen, whether for accident or disease. And the conviction henceforth gained strength that in the peritoneum we possess a powerful ally, always ranging itself upon our side instead of a foe. These facts gradually aroused doubts as to whether the free use of chemical germicides so beneficial elsewhere was, within the abdomen, really sound practice when it was seen that the peritoneum alone could dispose of infective material and when it was discovered that these germicides could exert noxious influences upon the inherent reparative powers of the membrane.

By degrees bacteriology and biology have furnished us with explanations of the facts observed in clinical study, and we have come to know something more definite about the defensive powers of the serous cavities. We know now pretty conclusively that these defensive agencies are not at an end when the membrane has thrown out a certain amount of plastic lymph for the repair of a lesion or the shutting off of an infected area. We believe that this is not its only function, but that under irritation it pours out an abundant effusion of fluid, diluting any toxins present, and that this fluid, like healthy serum, has besides an inherent property of inhibiting or destroying bacterial growth to a certain extent, limited of course, but marvellous as far as it goes. The observation that the peritoneum was able under proper stimuli to rapidly furnish lymph of the very best quality for the repair of damage was a very old one. But the view that the fluid poured out into the abdomen under traumatic or bacterial irritation was in the first place a diluent of any toxins present, and in the next inhibitory or destructive to organisms, has only come to us recently in the evolution of biological knowledge.

Its development has gone hand in hand with the study of phagocytosis, and cytolysis, and of antibodies and opsonins in the blood and fresh serum. And I cannot help feeling that these studies have not as yet sufficiently influenced our practice in dealing with the peritoneum. Immense industry and brilliant research have led very far and have furnished us besides with antitoxins and vaccines for a number of infections. But, speaking with the most profound respect and gratitude for these discoveries, I sometimes venture to think that attention has been more or less diverted by them for the moment from the marvellous powers of the body itself of producing antibodies *in situ* when called upon. For instance, where infection of the peritoneum is obvious, some of us are perhaps nowadays too ready to turn to manufactured antitoxins and to overlook the fact that before they were discovered countless cases had been saved by some germ-destroying mechanism inherent in the serous cavities themselves, probably in the serum and cells effused into them during inflammation. After all, the practice of increasing the amount of blood and serum in a damaged part by means of poultices, fomentations, and other so-called rubefacients is of great antiquity, and has been universally sanctioned as a means of combating destructive inflammation. But the biological mechanism, so to speak, by which hyperæmia operates in arresting septic processes has only recently received close study, as I have said. At all events, we are not so much afraid now as formerly of hyperæmia and effusion into serous and other cavities within certain limits. Indeed, under the influence of Bier's views on hyperæmia the premeditated increase of blood-flow and effusion of serum in infected areas has once more come to be emphasised as a regular practice with the very best results, as, for instance, in infective synovitis of joints and tendon sheaths. Here it has been proved over and over again that joint cavities swarming with certain bacteria beforehand are sterile after the hyperæmia treatment with rubber bandages or suction glasses has been properly carried out at intervals for a few days. That inflammatory effusions into the peritoneal cavity under septic irritation are also, up to a certain point, beneficial seems now certain. And this view explains why it is that we now very often obtain so much better results in abdominal surgery without drainage in cases where a few years ago it was considered indispensable and carried out very elaborately.

It is, of course, necessary to be very cautious in applying these theories to our practice in the surgery of the intestines, but we have, I believe, already received much valuable help from them just in this particular field. We have learnt to be more rigorous in our precautions for warding off sepsis from without during operation, more careful to guard the serous surfaces from all rough treatment during manipulation, and from chemical or physical irritation while exposed, and, on the other hand, more hopeful and bolder in cases where it is already obviously present within the abdomen. Let me illustrate this now by a case. About a year ago I was asked by my colleague, Sir Thomas Barlow, to operate on a boy aged 14 years who had been ill for some weeks with peritonitis, which had ultimately culminated in a localised swelling in the left iliac fossa, probably tuberculous in origin, and already softening into an abscess. With considerable misgiving, knowing from experience the softened condition of tuberculous intestines around a breaking-down mass, I operated. A foul, stinking collection of pus was found in the midst of adherent coils of small intestine thoroughly rotten. An attempt to separate them only resulted, as I had feared, in their crumbling down in several places. It was necessary to resect completely a considerable length of this small intestine ragged with holes and to join sound bowel end to end above and below the damaged portion, all of which was removed. Now all this was done without antiseptics in the presence of foul pus which we could not pretend to have completely evacuated and wiped away during and at the end of the operation. Notwithstanding, I thought it better to close the parietal incision without drainage, even at the risk of the effusion re-forming and pointing through the closed wound. This it did to a small extent after some days, but the discharge soon ceased, the wound healed soundly, and the boy made a complete recovery, being fat and ruddy and without any intestinal trouble when he returned for examination some months later. Not so long ago such a condition as was found here would, I confess, have seemed, at all events to me, hopeless, and would have been treated by simply drawing out the ragged, perforated bowel and making an artificial anus in it, with the usual bad result. But the boldest course proved the best, in spite of the septic condition encountered. It may be asked, Would it not have been better to put in a gauze drain down to the line of junction in the intestine? Possibly it might have been for a day or so, but I thought not at the time, and am of the same opinion still. The presence of effused serum after such an operation is not injurious within certain limits, and it is not necessary to drain it off in every instance. This requires judgment, and each case must be treated on its own merits.

I may be pardoned for alluding to two other cases bearing on the same point. As they have both been recorded, a brief notice will suffice. The first was that of a woman, aged 76 years, admitted into University College Hospital in a very serious condition, due to an internal strangulation of several feet of intestine by a band, with gangrene of some feet of it. On opening the abdomen, a couple of pints of very foul, dark, greenish-brown fluid escaped, and black dead coils of intestine followed. I found it necessary to resect 5½ feet of bowel to reach sound gut. No antiseptics and very limited mopping were used, and the edges of the wound, which had been soaked in the foul effusion throughout the operation, were united without drainage after being simply wiped dry. Primary union, not showing a single flaw, was the result, and I saw the patient two years afterwards, at the age of 78 years, quite well and hearty. She was an Ulster woman, which may, of course, have accounted for her vitality. The second case was like it in almost every respect. It was that of a lady, aged 49 years, to whom I was hurriedly called out of London 18 months ago. Here, too, there was a disastrous sudden internal strangulation by band of about 20 hours duration. The patient was cyanosed and pulseless at the wrist. When the abdomen was opened about 1½ pints of stinking, greenish-brown fluid gushed out, and a mass of black foul intestine was found to be hopelessly strangled. It was necessary to resect 4 feet 9 inches of bowel and make a side-to-side anastomosis. Here, too, the parietal wound was completely closed without drainage or the use of any [illegible] aled in ten days with only [illegible] y, in short, was perfect and [illegible]

In neither of these two cases could there be any pretence that the abdominal cavity was left quite clean by simple mopping at the end of the operation. But in both the peritoneum was manifestly able to deal with what septic matter remained behind after the removal of the gangrenous intestine and the bulk of the effused fluid. The most reasonable interpretation of the results appears to me to be that the effused fluid was, in the first place, inhibitory to the free growth of organisms, and in the second a diluent of the toxins of those present, enabling them to be excreted without harm to the system generally and to the kidneys in particular. I feel confident that without a belief in the newer views as to the powers of the tissues to deal with considerable quantities of certain septic matters I, at least, would have regarded these three cases as hopeless and would have abandoned them when I saw the state of things within the abdomen. Other cases similar to them might also be cited if time permitted. Moreover, I feel sure that any prolonged attempts to render the abdominal cavity more ideally clean either by flushing by antiseptics or sponging out—such as would have been made a few years ago—would have been not only futile here, but injurious to the defensive works of the peritoneum. In these cases we were dealing with intra-abdominal conditions undoubtedly contaminated. It was our business to restore the continuity of the obstructed and damaged bowel, and by every conceivable precaution of asepsis to prevent any superadded infection from without. This we did and evacuated the bulk of the foul matter. With what remained the peritoneum was able to deal, and did so rapidly.

We are here thrown back upon the faith of our fathers in the *vis medicatrix Naturæ*—a power intangible, beneficent, all-pervading, claiming our faith, arousing our hope, but baffling our analysis hitherto beyond a certain point. Yes, we have changed our conceptions of the protective and reparative functions of the serous membranes very much indeed within the past few years, and, as a rule, to the advantage of our patients. We recognise and understand their protective purposes more fully, and are careful to foster and not to impede them. Who would have believed a decade or two ago that the brain and cord may be bathed in virulent septic fluid for days, and yet recover all their delicate mechanism once more, aided by manufactured antitoxins introduced from without? And none have demonstrated this fact more satisfactorily than the physicians of Belfast in your terrible epidemic of cerebro-spinal meningitis. Again, the fact established by numerous observers now that this same disease in its severe forms may be recovered from under simple repeated tappings of the spinal canal through the lumbar sac without any injection at all suggests strongly that these serous coverings, too, must possess defensive works of the highest order, only requiring slight assistance in the removal of an overplus of poison to effect a complete recovery in many cases. And this does not apply alone to infection with Weichselbaum's bacillus. Those of us who, like myself, have seen our patients in a state of wild delirium, &c., from cerebro-spinal meningitis starting in the ear, relieved almost at once and ultimately recovering completely after repeated withdrawal from the lumbar sac of the products of inflammation, are driven to the conclusion that the powers of defence against bacterial invasion possessed by this cerebro-spinal serous membrane must be very great, and analogous to that of the peritoneum.

Once the assurance was arrived at that the serous membranes were on the side of the surgeon and not against him, a long step in advance had been made, and we were encouraged to put forth every power to preserve all their protective forces intact. For it became a matter of observation that these could, under certain circumstances, become exhausted. Prolonged exposure and chill, for instance, or injudicious manipulation or sponging quite apart from sepsis, had been found by experiments on animals and in practice on the human patient to lower the reparative forces of the peritoneum. And besides this, though the peritoneum could be shown to tolerate a certain amount of bacterial poison, it became quite clear that, marvellous as were its powers in this direction, they had their limits, and these could ultimately be reached, even in the case of the less virulent organisms. Also we came to know that there are various infections, for example, with certain streptococci, which seem almost from the first to baffle all the reparative and eliminative powers of the serous coverings. Which of us has not often [illegible] by operation? And which of us has not felt in operating for epityphlitic abscess that we have done little more than provide an escape for pus which had already been securely shut off from the system by adhesions, in spite of the bacteria and their toxins? Which of us, finally, has not seen many cases of severe epityphlitic peritonitis, where we have opened the abdomen early and found only general redness of the serous surfaces, with very slight effusion and no trace of reparative lymph, where deep general toxæmia was already obviously present, and where from the first the peritoneum seemed unable to cope with the poison, either on account of its quantity or, more probably, of its peculiarly noxious quality? We have seen the same thing in many cases of punctured wounds of the intestines. In some, great advances in the direction of repair only calling for a little ordinary surgical help, and in the others no progress at all in the formation of plastic lymph, and a condition beyond the reach of any operative measures. When we speak now of peritonitis we are conscious that we are using a term which includes conditions as widely apart as are an ordinary attack of eczema and a desperate cutaneous streptococcal erysipelas. This knowledge has already had the greatest influence on our treatment of abdominal inflammations. Take, for instance, the question of drainage, formerly considered indispensable. We now know that in many cases it is not only not necessary, but injurious. Many of us are able now in certain cases, where an inflamed epityphlon or pyosalpinx has been removed from the middle of a small abscess, to close the parietal wound without drain and obtain flawless union *per primam*.

Another observation which has had an enormous influence upon the surgery of the bowel is that healthy intestinal walls will prevent the migration to any serious extent of the bacteria of the contents through them, but that if their vitality is lowered (to use an ordinary term) by accident or disease, even without any breach of surface, this migration will take place through mucous, muscular, and serous coats, and the general cavity of the perineum will thereby be infected more or less seriously. This most important discovery —first made upon the fluid found in the sacs of herniæ in various degrees of strangulation and then demonstrated experimentally—has had a greater influence on our dealings with the intestines than is commonly supposed. On the one hand, it prompts us in our operative manipulations to deal as gently as possible with the tissues of the bowel, and, when the latter is damaged by injury, strangulation, or other diseases, to be sure that in removing it we only leave really healthy tissue behind, not merely that which shows no loss of substance, but such as is capable of resisting the emigration of organisms from within outwards. It also prompts us in cases where enterectomy is contemplated, and where time permits, to reduce the number of bacteria in the contents of the intestine by laxatives, enemata, and intestinal antiseptics, as well as by the cleansing of the mouth, teeth, and pharynx, and the use of only sterilised albuminous food. Moreover, it has led us in cases of obstruction to adopt the routine of washing out the stomach thoroughly before operation wherever feasible, knowing as we do, since the practice has been adopted, that in many such cases the stomach contains large quantities of putrid material which in course of time would have to be vomited or pass through the part of the intestine lowered in its vitality by the strangulation, and possibly also by the exposure and manipulation necessary during operation, thus increasing the chances of infection. That a certain limited number of bacteria pass from the intestine into the peritoneal cavity in health without injurious effects seems probable from recent investigations. This suggests the possibility of a gradual immunisation of the serous covering in chronic obstruction—a view which some of the facts observed in this condition seem to support.

Other additions to our knowledge, both theoretical and practical, have also combined to remove many of the risks of intestinal operations. Among these is our experience that patients after such procedures need not necessarily be entirely deprived of food by the mouth for long periods. This, of course, is contrary to the teaching of earlier days. And yet it is in accord with sound theory. We know now that the mechanical efficiency of our deeper line of sutures passing through all the coats of the bowel lasts in most cases for days if cleanly done, and is sufficient to prevent separation by the movements of peristalsis, and that round the outer seromuscular sutures enough lymph is thrown out in six or eight hours to produce fairly sound union and stop leakage. We know, too, that this plastic process is more perfect the better the patient is nourished. And as it is often the case that such patients have been precluded from having proper nourishment for days beforehand, or have constantly vomited it when taken, the need of aliment after operation is very great. Of course, when vomiting due to the anæsthetic is still present, food by the mouth is useless. But we are now able to give peptonised foods by the rectum, which were not formerly at our disposal, and have more recently learnt how to employ several important aliments subcutaneously. Here not only can water, the first need of the system, be given in large amount and with perfect safety in normal saline solution, but also carbohydrates in the form of 5 per cent. solution of glucose. In this way two ounces of sugar can be administered per diem; in short, a very important food, without any demand upon the alimentary tract. The increased action of the kidneys induced by the free *instillation of fluids* we believe to be most useful further in carrying off diluted toxic matters from the system charged with them as a consequence of the condition for which the operation was performed.

Then during the same period what improvements in the art of administering general anæsthetics have taken place! The drugs are now purer, the dosage better formulated, and the danger signals during administration better understood. We now recognise that the anæsthesia must be pressed while the peculiarly sensitive parietal peritoneum is being manipulated, while it may be reduced or actually omitted during the manipulations and stitching of the practically insensitive intestine. The amount of the drug therefore given in these mostly protracted operations is now enormously and advantageously reduced in the hands of experienced administrators. This we owe in a large measure to the recent brilliant demonstrations on the innervation of the parietal and visceral peritoneum by our Swedish and Russian *confrères*. Their discoveries supply us besides with many data of the utmost use in the localisation of lesions in the abdomen by painful impressions. Further, many of the dangerous pulmonary sequelæ of general anæsthesia so often seen not long ago in intestinal surgery, especially when stercoraceous vomiting was present, and before the routine of washing out the stomach before operation was practised, are now reduced in number and severity. Thus infective affections of the lung are avoided or controlled by greater care in cleansing the apparatus employed, and the rigid attention to the antisepsis of the teeth, nose, and throat which is now also a matter of routine. We have also learnt that the lung troubles which so often follow abdominal operations can be prevented, and favourably modified by abandoning as soon as possible the recumbent position formerly thought indispensable after operation, and by placing our patients in the sitting position in or out of bed within a day or two of the operation. This has also probably a favourable influence on that nightmare of abdominal surgery, pulmonary embolism or thrombosis, which, though regarded by most of us as depending on septic conditions, is undoubtedly favoured by shallow respiratory movements in the recumbent position.

Whether the employment of local and spinal analgesia will ultinately eliminate some of the risks following general anæsthesia, it is too soon to predict with any certainty. But from what I have myself seen of both procedures in hundreds of cases, and from the study of analyses of many thousands more now published, I cannot help hoping that there is a great future for both in abdominal and especially intestinal surgery. On one point, however, I believe all surgeons who have employed spinal analgesia to any extent are agreed, and that is that the conditions under which the operations are done with it are immeasurably superior to those present under general anæsthesia. There is, for instance, absolute quietude and relaxation all over the field of operation—no small matter in the patient's interests where delicate adjustment of parts is of importance. At all events, for my own part I have thought it my duty to study the whole question in its many aspects, and to examine into the value of these methods in hundreds of cases guardedly, patiently, and I hope dispassionately. For local analgesia, which is quite innocuous when used intelligently, there is undoubtedly a considerable, if restricted, field of usefulness in abdominal work, as, for instance, in strangulated hernia in the aged and decrepit. Here it is an ideal procedure, and I believe it has already saved many lives by eliminating the well-known risks of general anæsthesia.

Another point which has had a remarkable influence upon intestinal surgery has been brought out within the last few years, partly by experimental work on animals and partly by the experience of surgeons who have felt themselves compelled, for one reason or another, to remove considerable tracts of bowel. We have learnt that considerable lengths of the jejunum, ileum, colon, and rectum can be at all ages removed without any very apparent influence for evil upon the processes of digestion and assimilation. I do not for a moment wish to suggest that we have arrived at final conclusions upon this point. Physiologists are at present hard at work upon it, as I know, and are making extensive studies on the excreta of patients who have been compelled to part with various portions of the alimentary canal. Nor do I wish to acquiesce in the removal of any part of the latter tube for any but the most unavoidable reasons. I merely desire to draw attention to the fact that for some of the gravest emergencies in human experience large portions of the intestinal tube have been removed without seemingly producing the deleterious effects which might perhaps have been expected. My own experience of such procedures includes the removal, in one case, of between 6 and 7 feet of small intestine, in several of between 5 and 6 feet, and several more of lesser amounts of both small and large intestine. In none of these was there any evidence months or years later that the general health had been in any way injuriously affected. And it has been the same in many published cases though not in all. At all events, I believe it has been shown that the removal of any amount of small intestine up to 6 feet can be well tolerated. And, as far as I know from observation and study of the literature of the subject, age or sex does not influence this conclusion. My own eldest case was aged 76 years, and here at least 5½ feet were excised, the patient being in excellent health two years later, as was also another case over 50 years of age in which I removed 6½ feet. How much of the large intestine can be removed without demonstrable effects on the health is not yet fully known, but for malignant and tuberculous affections nearly the whole has been taken away or excluded from use, and the patients have enjoyed good health afterwards. I have recently seen one of my own cases in which more than five years ago I extirpated a great part of the colon for malignant disease and excluded the rest, and the patient is now in the most robust health, and without any sign of recurrence, with only the rectum representing the large intestine. A full report of the effects on the excreta of the elimination of the colon in this case will soon be published from the chemico-pathological laboratory of University College. But it is, in my opinion, quite another thing to say that the large intestine should be removed for other less serious conditions, such as chronic constipation. Personally, I have no experience of the procedure for this trouble, and am not concerned with the controversy anent it.

Having reviewed some of the factors contributing to our present success in intestinal surgery, let us glance at some of the conditions formerly considered desperate which have been actually relieved during the last decade or two. Among the injuries, punctured and bullet wounds and bad contusions of the bowel have been successfully dealt with; gangrenous strangulations, external and internal, with or without the removal of long pieces of bowel, have been saved; large sarcomata involving intestine have been extirpated; tuberculous tracts of intestine in a hopeless condition of ulceration have been taken away with transient or permanent relief; typhoid ulcers and perforations have been excised, and though only a small percentage of the patients afflicted with them have been saved, owing to the general condition, we must remember that the best authorities tell us that the mortality of typhoid perforation treated without operation is 98 per cent. Intussusceptions operated on at a reasonably early stage are now almost invariably successful.

But perhaps the greatest achievements of intestinal surgery have been those gained over the terrible cancers of the bowel, so hopeless and so distressing until quite recently. If we had learnt nothing more about these than that they could in most cases be successfully short-circuited, and that the patients could thereby be relieved of the immediate dangers of obstruction without the sad necessity of a permanent artificial anus, with all its bodily and mental distress, we should have won an immense boon for a class of sufferers who claim our sympathy almost above all others. But the last few years have taught us far more. We have seen that cancers of every part of the large intestine, from the cæcum to the anus, can be removed with immediate success and with, at all events, as much prospect of non-recurrence as those of other parts; perhaps even greater. Indeed, this ought to be so, seeing that we are dealing in most cases with columnar epitheliomata of a low type of malignancy whose mode of lymphatic extension is through tissues well defined and accessible, and better understood, anatomically, than any other. In any case, the gain of several years of life, which is common now, is an enormous one, especially as the objectionable artificial anus is becoming rarer and rarer.

The greatest advance of all, however, is in the direction of dealing with those terribly distressing conditions due to cancer of the lower part of the large intestine. Since it has been demonstrated by countless cases that carcinomas of the pelvic colon and rectum, unapproachable only a few years ago, can now be removed with a good prospect of prolonged immunity from recurrence, if no more, a great load has been taken off the surgical mind. We owe to Kraske and his followers a great debt for the gift of the trans-sacral operation for the removal of cancer of the rectum. We owe him perhaps more for the working out of the combined abdominal and dorsal procedure which he has recently advocated for some cases as a substitute for his original trans-sacral method, the defects of which he has recognised and frankly acknowledged. And as its principles and details become more and more familiar and the selection of cases follows the usual course our gratitude will, I believe, deepen. In this procedure we have not only the prospect of excising the original growth anywhere between the anus and descending colon and preserving the anus in all its functional integrity, but also of removing those parts of the retroperitoneal tissues which contain the lymphatic vessels and glands likely to be, if not actually, infected with malignant elements from the growth. Herein we are only following the principle recognised now as indispensable in all operations on cancer, whether of the tongue, breast, or other organ—that is, that it is not only necessary to the highest ideals of success to extirpate the original cancer, but also all those tissues around, in which the lymphatics run, whether visibly or tangibly infected or not. This combined method of operating on the pelvic colon and rectum is, of course, a severe procedure, and at present has a high mortality for several reasons, mostly those due to faulty technique and inexperience in the selection of proper cases. But if in the hands of the best surgeons who followed Kraske in the first few hundreds of ordinary trans-sacral operations the mortality was over 30 per cent., and has fallen since in the hands of some experts, each with an experience of several hundreds of operations, to about 10 per cent., we may surely hope for a corresponding improvement in the immediate results of the abdomino-dorsal method as it is better understood. Of the superiority of its functional results over the sacral methods there can be no question. And as to the greater immunity from recurrence we have every reason to believe that it will be proved when we have larger numbers from which to judge after years of observation. And with so formidable and painful a malady there are numerous sufferers who would be prepared to face some extra risk from an operation which offered a larger hope on the two points of function and non-recurrence. And we must not forget that a new source of accuracy of diagnosis has come to us in the use of the Roentgen rays acting on meals mixed with bismuth and other substances. This method of examining the state of the bowel seems to promise in the future to patient and surgeon alike a large measure of help.

I have tried now to give a short review of the gradual evolution of intestinal surgery from the point of view of one who though still in his fifties has seen it in his own time. This evolution has not been the result alone of the better conception of asepsis, much as we owe to it. Nor has it been due altogether to improved manipulative skill. It has resulted from clearer views on the vital processes concerned in all lesions within the abdomen. These we have gained partly from closer clinical observation, aided by what we have learnt from the anatomist, the pathologist, bacteriologist, biologist, and physicist, and from careful sifting of our experiences, whether of failure or success.

Looking back, as I have tried to do here, and looking forward, as every hopeful man must and ought to do, we see encouragement in both directions. What has been done within the last few years in this important field of surgery, in spite of the enormous difficulties which surround it, assures us of a far greater yield in years to come, working, as we shall do, under more favourable conditions and with ever-increasing knowledge. Is any inclined to despond, thinking, mayhap, of the magnitude of the problems still unsolved and the smallness of his own individual powers of grappling with them, let him listen to the clarion note which rang out just one hundred years ago from one ranking among the greatest philosophic thinkers of his day and certainly its greatest poet:—

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> [illegible]
> [illegible] rong.”

This appeal has since then been finely responded to by his own countrymen, though at the time almost crushed materially and inclined to be despondent. Let us see to it that we, too, undeterred by the languid interest in science of a commercial and materialistic age, press ever onward, thankful for past achievements in the interests of suffering humanity as we look backward, hopeful and courageous as we look forward to the years to come.

FOOD ADULTERATION.—The annual report of the Bristol city analyst and bacteriologist for 1908 states that during the year there were 1303 samples of food and drugs submitted for analysis. Of these 1170 were genuine and 133 were adulterated, the latter including 101 samples of milk, 15 of butter, six of margarine, and five of spirits. In 1907 there were 1300 samples examined and 122 were found adulterated.

CHRONIC "RHEUMATIC" MYOSITIS (MUSKELSCHWIELEN),

WITH CASES SHOWING SOME COMMON ERRORS IN DIAGNOSIS.

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I FIRMLY believe that the most frequent cause of the so-called "gouty" or "rheumatic" pain is a form of chronic myositis, and surely suffering which is so widespread and which will in most cases yield to appropriate treatment demands our attention. These muscle deposits have been recognised and successfully treated abroad in the Germanic countries for more than 35 years.

At the January meeting of the Philadelphia Neurological Society of this year, in a paper on "Indurative Headache,"[1] I called attention briefly to these general muscular thickenings. While reading the references for that paper I was amazed to learn of the frequency of the development of chronic myositis in muscles other than those of the head and neck, and my attention was also attracted to errors in diagnosis to which this condition has given rise. As early as 1843 Froriep[2] recognised the condition, but the first important contribution to medical literature upon this subject is by Uno Helleday,[3] a Swede, who, in 1876, wrote extensively about this matter and reported eight cases showing that lesions occur in various parts of the body, all of which he treated successfully. The article finally ends as follows: "The object of these histories and what has gone before is to impress you with the importance of carefully examining the musculature of many cases which present a picture other than that which you usually understand as muscular rheumatism." Gowers,[4] under the heading of "Neuro-myositis," writes without being at all definite about the subject, but he evidently recognises that it is important when in closing he says: "The influence of gout, including ancestral gout, is a subject upon which the young practitioner starts with a high degree of scepticism regarding the teaching of his seniors. But year by year his doubts become fewer and fewer, as they are rubbed away, or removed more sharply, by contact with fact." Because of the thoroughness of Gowers's writings, I mention his book to show that this subject has made almost no headway among the English-speaking people since its careful study by the Scandinavians more than 35 years ago.

Among the causes affecting this condition is heredity, there being a distinct family tendency to these diseased muscles. The effects of climate and weather are most marked. In a case of indurative headache which I have reported the patient found the damp, foggy weather of England very annoying, but he was happily free from suffering while travelling in Switzerland. Chilly and rainy weather often causes the indurations to become painful; it is sufficient to be within the outer limits of storm conditions and not necessarily within the area of rainfall. They may appear at almost any time of life. I have recently observed temporarily infiltrated muscles in the neck of a child of two years and they are common in old age. While probably no voluntary muscle enjoys an immunity there are sites of predilection, the most common of which is in the muscles of the head and neck. This, I believe, is due to the exposure through lack of covering, to which this part of the body is necessarily subjected. The gluteal, lumbar and deltoid regions, and calf muscles are often involved. The muscles may be invaded at their points of insertion, as in those attached to the superior curved line of the occipital bone and those inserting into the processes of the upper cervical vertebræ, or the infiltrations may appear within the bodies of the muscles as is frequently seen in the abdominal walls, and in the sterno-mastoid muscles near the level of the thyroid cartilage. At times the infiltration extends to the periosteum to which the muscles are attached and also to the fascia.

The pathology of these diseased muscles is largely hypothetical for the reason that people do not die from this condition. By some it has been thought to be of nervous origin, but Vogel, quoted by Bum,[5] in sections from rheumatic muscle found thickening and adhesion of the neurolemma to the nerve branches supplying the muscles, a finding which does not strengthen the neurogenous hypothesis of this condition. Oppolzer,[6] from his studies, believes the lesions are not inflammatory in character, a view which does not coincide with that of Helleday. The muscle infiltration may be due to the deposition of an excess of the salts of uric acid or an allied substance, with the later formation of connective tissue. I have known vigorous massage treatment of a patient with extensive indurations to be followed by an attack of acute muscular rheumatism. It seems probable that this formation of indurations is a manifestation of a metabolic disturbance autotoxic in character. At all events it appears that as soon as good circulation is established relief is at once experienced. Whatever this muscle poison is, many of its subjects have had bilious attacks in childhood, and in advanced life they often suffer from arteriosclerosis.

These infiltrations or myisitides (the Germans prefer myitides) may "make up" over night; they are frequently absorbed but tend to recur. After appearing again and again at the same point they finally become chronic and then vigorous treatment is necessary for their removal. The enlargements present a different feeling upon palpation, depending largely upon their duration; the longer they exist the firmer they become and the more resistant they are to treatment. Those of recent development are known as *swellings* and feel doughy to the touch; others because of their firmer consistency are spoken of as offering resistance; and finally those of long standing show cartilage-like thickenings and are known as *indurations*. They also vary in size and in the intensity of the pain which they occasion. There may be a diffuse and extensive infiltration which causes but little inconvenience and which may not manifest itself except during action of the involved muscle, as is seen in the milder cases of lumbago. Again, small patches may give rise to frequent and excruciating pain and this is not unusual in the abdominal muscles, where shot-like enlargements are often found.

It has seemed in what I can gather from the literature and by my own personal experience that these deposits may develop under the following conditions: in muscles that are overworked, as in some cases of writers' cramp[7] and other occupation neuroses; in those that are not sufficiently exercised; in muscles that are much exposed, as in those of the head and neck; and, finally, where an injury has been sustained, which is frequently the case in the back. The symptoms are those of pain which may be sharp and cramp-like, or there may be an aching sensation upon use of the diseased tissue. Instead of pain there is at times paræsthesia at some distance from the deposit, as in a patient seen by Norström[8] in Paris who had for years complained of the sensations of cold, numbness, formication, &c., in the thumb and two adjoining fingers of the right hand, and which upon examination presented a big lump in the deltoid muscle which pressed upon the radial nerve without giving any special abnormal manifestation in the muscle itself. There is often muscle insufficiency. Upon pressure made with a friction movement there is tenderness, but firm and steady pressure often affords relief. If the swollen muscle impinges upon a nerve trunk or nerve fibre a true neuralgic pain will result. There may be diminished or absent elasticity; finally, the presence of a palpable thickening in the muscle; fever and redness are absent. There are often associated symptoms in various parts of the body, some of which are depression of spirits, mental torpor, unnatural drowsiness, marked susceptibility to cold, torpidity of the liver, indigestion, painful spasms of the calf muscles, paræsthesia, general myasthenia, pyorrhœa alveolaris, and hypersensitiveness of the teeth.

To those familiar with muscle conditions I know of but one lesion that is likely to be mistaken for an induration, and that is a gumma. Indurations are exceedingly common; there is a history of chronic rheumatic pains; as a rule they are less sharply defined; there is pain upon pressure with friction, and they yield [illegible] in muscles are relatively ra[illegible] attended by other evidence [illegible] antispecific medication.

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[1] Indurative Headache (Schwielenkopfschmerz), with Report of Three Cases, Journal of the American Medical Association, April 24th, 1909, vol. lii., p. 1316.

[2] Ein Beitrag zur Pathologie und Therapie des Rheumatismus, Weimar, 1843.

[3] Om Myitis Chronica (Rheumatica), Nordiskt Medicinskt Arkiv, vol. viii., 1876.

[4] Diseases of the Nervous System, P. Blakiston's Son and Co., Philadelphia, 1903, vol. i., p. 134.

[5] Handbuch der Massage und Heilgymnastik, Urban und Schwarzenberg, Berlin, 1902, p. 293

[6] Allgemeine Wiener Medicinische Zeitung, v. 27, 1867.

[7] Wide: Handbook of Medical and Orthopædic Gymnastics, Funk and Wagnalls Company, New York, 1903, p. 277.

[8] Chronic Headache and its Treatment by Massage, New York Medical Journal, 1905, vol. lxxxii., p. 956.

The mistakes in diagnosis to which those rheumatic deposits give rise are very numerous. Many cases of cephalalgia are of this variety[9]; involvement of the intercostal muscles has been taken for intercostal neuralgia and pleurisy; i[illegible] ute and chronic appendicitis [illegible] pelvic adhesions, calculus of [illegible] involvement of the gluteal [illegible] t disease; in the neck they have been mistaken for swollen glands; the frequently complained of growing pains in children I believe are due to this condition, since the healthy growth of a child should not be painful.

I shall allude briefly to a case reported by Kleen[10] which was at first thought to be one of gastric ulcer. The patient was a female, aged 23 years, single, who for more than a year had suffered from pain circumscribed at a point over the gastric region a little to the left of the median line. The pain was constant but worse after meals. There were other slight symptoms of indigestion. Upon palpation a distinct difference in the consistency of the upper portions of the recti abdominales muscles was made out, the left being the harder and the more extensively infiltrated. At this area careful lateral pressure caused sharp pain which evidently had its origin in the muscle. When she endeavoured to rise without the assistance of her hands the pain was intensified at this point. The patient recovered under less than a month's massage treatment.

I have myself encountered indurations in the abdominal muscles and know of a Philadelphia woman who for a long time had suffered from sharp attacks of pain in the abdominal region. During a trip abroad she had an attack of unusual severity. A physician was summoned, a diagnosis [illegible] te operation was [illegible] of milder attacks [illegible] to submit to the [illegible] lay or so the pain [illegible] hia her condition was recognised as being due to deposits in the abdominal muscles. Through a course of massage the diseased muscles were restored to normal, and while she still has her appendix she no longer has the abdominal pains.

Moderate distension of the abdomen with gas is very common, and with the abdominal muscles in this indurated condition it takes but slight distension to cause stretching of the diseased muscle fibres, thereby causing pain. In some of the cases where normal appendices are found at operation it is the abdominal muscles that are at fault. I have recently examined the abdomen of a physician while he was having an attack of colicky pain. He was subject to mild attacks of this kind and stated that some time before he believed that he had an attack of appendicitis, but that an examining surgeon advised against operation. I found his abdomen slightly tympanitic and the abdominal muscles infiltrated and very tender. The pain was relieved by firm, steady pressure. Some of the muscles of the head and neck were hypersensitive and he often suffered from headache. Within a few hours the distension subsided and the pain ceased. I think it very unlikely that his appendix had at any time caused the abdominal pain.

I am aware of the incredulous attitude of orthopædic surgeons towards a rheumatic condition about the hip-joint of a child, but the condition surely exists at times, and there are a number of cases in literature where rheumatism has been mistaken for incipient tuberculosis of this part and the child has been placed upon extension, while a later diagnosis was followed by proper treatment and prompt recovery. This may account for cases of hip-joint disease reported as cured without shortening and with perfect motion. Many cases of early hip-joint disease are diagnosed as something else, and the fact remains that a few cases of lameness with rigidity of the muscles about the hip and pain around the hip and knee are rheumatic and should be recognised and treated as such.

The following case was referred to me by Dr. Ralph Butler in April of this year. The patient was a dressmaker, aged 38 years, in whom the present trouble began 14 years ago with an intermittent grumbling pain in the right lower jaw. Six weeks later she had a severe attack with pain extending into the right ear and back part of the right side of the tongue. The year following the attacks became frequent and quite severe. At times several months would pass without paroxysms; again they might occur every five or ten days and persist for days or even weeks. The neuralgia would often begin with frequent and mild attacks, then recur more often and be of greater intensity. At times when asleep she would be awakened by such an agonising attack that she would cry out with pain. She has walked the floor for hours with her hand pressed as forcibly as possible against her face. For a week at a time her face has been so painful and stiff that she had to limit herself to a liquid diet. There were occasions when it was almost impossible to avoid provoking attacks, they being caused by passing a comb ever so gently through the hair, the slightest breath of cold air, brushing the teeth, putting out the tongue, or even attempting to speak. The paroxysms would start with just a few twinges of pain; these would increase, and then the most agonising suffering would ensue. Attacks would last for almost a minute, recur again and again, and finally cease, leaving the patient almost exhausted. During the most severe attacks the affected side of the face would suddenly become flushed and the eyeball injected; this would pass away with the paroxysm. During the most severe attacks the pain would extend into the orbital cavity. Her oculist was consulted yearly in the hope of obtaining relief, six teeth were extracted, but all without improvement. Three years after the beginning of the attacks the facial muscles began to twitch; this was relieved by an injection of alcohol. A year ago a neurologist was consulted, who said that the Gasserian ganglion should be removed at once. In addition to the neuralgia there had been headaches, which were very severe and of late had become almost constant. There was much pain in the back of the neck and at times the scalp was very sensitive. She had frequently suffered from rheumatic pains in different parts of the body, especially in the right arm and about the right hip, where infiltrated areas were present. The neuralgia, headaches, and bodily pains were all worse in damp and stormy weather. A year ago she was obliged to give up her work for six months, and this spring her suffering was just as great.

On examination the patient was anæmic, with an anxious expression, and presented the appearance of one who had undergone great suffering. The scalp was thickened and hypersensitive, with especially painful areas over the trapezius muscle and in the supraorbital region on the right side; these areas were indurated, as were most of the trapezius and other muscles [illegible] There was also involvement [illegible] the neck, especially at their [illegible] processes of the upper cervical vertebræ. The [illegible] part of the face was along the upper lip just [illegible] It would take but the slightest touch at this [illegible] a paroxysm. The small facial muscles [illegible] painful upon the affected side.

I made a diagnosis of trifacial neural[illegible] of peripheral origin, involving the three [illegible] and indurative headache. Local tre[illegible] manual massage and rapid vibration [illegible] motor was advised. After a few [illegible] attacks of neuralgia ceased, thou[illegible] ue pressure over the hypersensitive [illegible] of ments per week for two mont[illegible] ce, [illegible] of [illegible] to [illegible] w not been complete. The[illegible] es [illegible] te [illegible] e

[illegible] and I hope [illegible] now live [illegible] ns. [illegible] eights. [illegible]

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[9] Edinger: Diseases of the Nervous System, Appleton and Co., York, 1903, p. 263.

[10] Handbook of Massage, P. Blakiston's Son and Co., Philadelph 1892, p. 95.

CASE OF MISSED LABOUR TREATED BY ABDOMINAL SECTION.

BY C. E. PURSLOW, M.D. LOND.;
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IN THE LANCET under date of June 26th is an account of a case of missed labour by Dr. Peter McEwan of Bradford, in which he makes the suggestion that some cases of this kind would be best treated by abdominal section. This prompts me to send you an account of a case in which I carried out this line of treatment and which is, I believe, in some respects unique.

The patient, aged 33 years, was admitted to the Queen's Hospital, Birmingham, on Sept. 19th, 1907, with the following history. She had been married 12 years and had had four children and one abortion; the latter was an instance of missed abortion, and the circumstances are so unusual that I may be pardoned for narrating them. On that occasion she came to the Queen's Hospital and stated that she was passing "bones" per vaginam. As the uterus was large she was admitted on Nov. 16th, 1905. On inquiring into her history it was found that her last menstrual period had taken place in May; subsequently she had considered herself pregnant and for three months there was complete amenorrhœa. Irregular losses then came on and continued until admission, and for some weeks she had passed an occasional bone. The uterus was found to be of the size of a three months' pregnancy. The patient was anæsthetised, the os dilated by Hegar's dilators, and a mass of fœtal bones was removed by ovum forceps and flushing curette. These were carefully examined by Dr. A. E. Remmett Weaver, obstetric house surgeon, and were found to comprise almost the entire skeleton of a three to four months' fœtus. She made a good recovery and went home at the end of a fortnight.

After leaving hospital the patient menstruated regularly, the last period occurring on Sept. 16th, 1906. From that date until her second admission, a period of more than 12 months, there had been no sign of vaginal hæmorrhage. She considered herself pregnant, and in February felt fœtal movements; these continued up to June and then entirely ceased; since that time she had suffered from a rather severe constant pain in the abdomen from which she was very anxious to be relieved. On examination she was found to present the signs of full-term gestation, but there was very little liquor amnii, and the uterus was hard and felt as though it were in a continual state of tetanic contraction; it was tender on palpation. The cervix was not typically softened and the os was closed. Two days after admission she was placed in the lithotomy position under anæsthesia with the intention of dilating and evacuating the uterus; it was found impossible to pass a Hegar's dilator into the uterus and the same was the case with the uterine sound. I was at a loss to explain this and suspected a fibroid in the lower segment. I therefore opened the abdomen and removed the uterus by panhysterectomy. The wound healed by first intention and the patient made a good recovery.

The uterus with its contents was submitted to Dr. Leonard G. J. Mackey, pathologist to the hospital, and he reported as follows: "The uterus is closely moulded to the fœtus; there is barely an ounce of somewhat turbid liquor amnii. The fœtus is the size of a full-term child and, judging by the general appearance, the length of the nails, and the amount of hair, it appears to be fully developed. The skin is of a dirty-brown colour; the cuticle, wrinkled and easily detached, is covered in parts with a cheesy substance which is deep yellow as if stained with bile. The bones of the skull are loose and move easily as one presses on the scalp. The wall of the uterus is about half an inch in thickness; the muscle is pale and easily splits into layers. The placenta is situated almost centrally over the internal os and lines the lower two-thirds of the uterus; it is of very firm consistence. A thin grey membrane separates the uterus from the placenta and remains attached to the former when the latter is removed. The specimen is quite odourless. Microscopically, the placenta shows a finely scattered calcareous deposit, the villi have undergone hyaline degeneration, and there is old thrombosis of the intervillous sinuses. There is a considerable amount of fibrous tissue scattered among the muscle fibres of the uterus, but the muscle itself does not show any marked change. The walls of the arteries are thicker than usual, many of the large blood spaces are filled with old thrombi, and, in some, organisation of the thrombus is well marked."

Missed labour is by all authorities regarded as a very rare condition, and its occurrence in a case of complete placenta prævia is, I think, unique. I have made an extensive search but have been unable to discover any record of a similar case. The obstruction caused by the tough placenta explains the inability to pass the sound or dilator into the uterus.

Birmingham.

A CASE OF

INCARCERATION OF THE VERMIFORM APPENDIX CONTAINING A FOREIGN BODY (PIN) IN THE SAC OF AN INGUINAL HERNIA IN A CHILD.

BY THOMAS H. KELLOCK, M.C. CANTAB.,
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EXAMINER IN SURGERY, UNIVERSITY OF CAMBRIDGE; SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, ETC.

IT is not at all an uncommon experience to find the vermiform appendix as the occupant of the sac of an inguinal hernia, nor can the lodgment of a foreign body in a child's appendix be regarded as a very rare event, but the combination of these two conditions which occurred in the following case must be rare, and would seem to make the case worthy of record.

A male child, two years and four months old, was recently admitted under my care at the Hospital for Sick Children, Great Ormond-street. He came of a family in which there was no history of either tuberculosis or syphilis and had had no previous illness. The first indication that there was anything wrong was about six months previously, when the mother accidentally noticed that he had a small hard swelling in the right inguinal region. She stated that it seemed to be neither painful nor tender, and did not seem to cause the child any inconvenience. From that time onward she thought it increased slowly in size, but it never disappeared even when the child was asleep. He had not been sick, and the bowels had acted regularly. For the fortnight before admission he had not taken his food as well as usual.

On admission the patient was an undersized delicate-looking child. Just outside the external abdominal ring on the right side a tumour of about the size of a filbert could be seen and felt, oval in shape, very hard, especially at the lower end, attached apparently to the subcutaneous tissues, irreducible, and without impulse when the child cried or strained. It could not be moved independently of the spermatic cord, although traction on the testicle did not have much effect on it. The testicle and spermatic cord below the swelling were normal, and examination of the abdomen revealed nothing suggestive of tuberculous disease of the peritoneum. Examination of the chest showed some dulness at the base of the right lung, where the breath sounds were weak. As the swelling in the groin did not seem to cause the child any inconvenience, operation was delayed on account of the condition of the chest. Here about 14 days later definite signs of fluid showed themselves; the pleura was opened and a quantity of pus was evacuated. Bacteriological examination of this showed it to contain streptococci and a pure culture was obtained. The empyema was nearly a month in closing. At the end of that time the child's general condition had very materially improved and it was decided to explore the tumour in the groin which had remained practically stationary in size.

On making a longitudinal incision over the tumour it was at once seen that there was a good deal of infiltration of the subcutaneous tissues. After separating some of the adherent parts the tumour was isolated; it was found to have a pedicle leading up through the external abdominal ring and to be intimately connected with the spermatic cord. The front of the tumour was densely hard, but posteriorly it was soft, and on making an incision behind it was found that a sac had been opened and immediately under the incision the proximal end of the vermiform appendix was recognised. On attempting to draw this out it was found to be adherent at its distal end, but traction on the proximal end brought down the cæcum. With some difficulty the appendix was divided close to the cæcum and the latter returned to the abdomen. The rest of the tumour was then removed, the neck of the sac being transfixed and tied and the abdominal wound closed.

On examining the mass that had been removed it was found to contain the whole of the vermiform appendix; the proximal portion was healthy, but the distal end was much thickened and intimately adherent to the wall of the sac. It was found to contain an ordinary pin which was lying almost transversely to the lumen of the appendix; the point had perforated all the thickness of the wall of the appendix and was implanted in the wall of the hernia sac and surrounding tissues. There was no pus either in the lumen of the appendix or in the surrounding parts. Slight suppuration occurred in the superficial part of the wound, but this rapidly healed, and the patient was discharged in good health just a month after the operation.

It can only be a matter of conjecture in this case whether the impaction of the pin in the appendix or the descent of the latter into the hernia was of primary occurrence. The fact that the mother had never noticed any swelling in the situation of the hernia before she discovered the hard lump there would, perhaps, point to the probability of the pin having been in the appendix before this descended into the sac. It must also be a matter of doubt as to whether there was any causal relation between the perforated appendix and the empyema. The extraordinarily little discomfort which the condition caused the child and the absence of actual suppuration when the wall of the appendix and that of the hernia sac were both perforated by the pin seem rather noticeable features in the case.

Queen Anne-street, W.

A CASE OF ANGIO-NEUROTIC ŒDEMA ASSOCIATED WITH CIRRHOSIS OF THE LIVER.

BY S. G. CORNER, M.A., M.B., CH.B. EDIN.

A MALE patient, aged 40 years, consulted me in the latter end of 1908 for swelling of both ankles and pain which prevented him from walking. He had suffered from this condition for three years. On examination I found œdema of both feet and ankles, which were tender on pressure. All the veins of the lower extremities, together with the superficial abdominal veins, were varicose and distended, and an enlarged vein was present in each axilla. Slight enlargement of the liver was evident, and I had reason to believe that some degree of cirrhosis of that organ was present. The heart and lungs were normal. There was nothing notable in the family history or previous illnesses of the patient except that about three years ago he sustained a fracture of the tibia, from which time he dates his œdema and varicose veins. The urine was normal.

Under rest, total abstinence, and Scott's dressing applied to the ankles he recovered in three weeks and was able to walk without pain. About a month later, while in bed, his upper lip suddenly swelled up. He came to me the next morning and showed a tense swelling in the left side of his upper lip. The swelling subsided during the day, but next night his lower lip became similarly affected, and a swelling developed in the neck. Night after night a lump appeared in a new place. Once the whole tongue was swollen up, so that he could not protrude it. On another occasion the scrotum became tense and œdematous. The back, the buttock, and the arm—in fact, any region—was liable to become the seat of a sudden swelling, varying in size from that of a hazel-nut to that of a hen's egg. The tumours generally appeared at night and were preceded by slight itching.

I regarded the case as one of angio-neurotic œdema and gave him 10 grains of calcium chloride three times a day, increasing the dose to 20 grains. Whether as the result of this treatment or not, the swellings appeared at longer intervals, and in about a month he finally had no swellings at all. He has now been perfectly well for four months, though he still retains varicose veins of the lower extremities and on the surface of the abdomen.

Coggeshall, Essex.

THE PLACE OF THE POOR-LAW MEDICAL OFFICER IN A UNIFIED COUNTY MEDICAL SERVICE.[1]

BY MRS. SIDNEY WEBB, D.LITT.

I HOPE that I shall not be considered impertinent if I venture to say that of all the branches of the public service that of the Poor-law medical officer seems to me to be, at present, the most hardly treated, the least appreciated, and the most depressed. Take, first, the remuneration. You are unfortunately only too well acquainted with the miserable pittances of £50, £80, or £100 a year that the nation allows to thousands of fully qualified practitioners, for laborious duties of the highest importance to the public health, *at a rate which often works out at a few pence per attendance*. Consider the degradation of having to balance the cost of the drugs that ought to be used in any particular case against the prospect of having to spend on that case out of your own pocket far more than you are paid for it. Then consider the total absence of any professional stimulus, the lack of any encouragement by competent inspection, the absence of professional records, the complete indifference of boards of guardians and the Local Government Board to any results, as shown by their failure to ask for any reports or to inquire whether the patients live or whether they die. Finally, think of the future of a Poor-law medical officer. Year after year he may go on in the same round of uncomfortable Poor-law practice, without prospect of promotion, usually without even an advance of salary, without the slightest chance of rising out of the narrow rut into which Fate has thrust him. Has any mark of distinction or any sort of public honour—I do not say a baronetcy, but anything whatsoever—ever been given to a Poor-law medical officer, as a Poor-law medical officer, even for the most meritorious, the most zealous, the most useful, and the most prolonged official service?

In the course of my membership of the Poor-law Commission there was nothing with which I was more impressed than with the amount of devoted work, really quite unpaid for, that the Poor-law medical officers were, as a class, giving to the poor; or than the utter lack of official appreciation and encouragement which that work secured. What many members of the Poor-law medical service feel most is not the miserable pay that they get, nor the lack of official appreciation or encouragement, nor even the absence of honour and dignities, but the extraordinarily narrow scope that, under the necessary limitations of the Poor-law, they find for useful work. It is not encouraging, for instance, to have through one's hands (as the Poor-law medical officer does) one-third of all the deaths from phthisis; and yet, as several Poor-law doctors told us, never to have seen among them a single curable case. It breaks the spirit of a man who cares anything about his professional work to have to go on year after year merely pretending to deal with cases, which have come to him only when destitution has set in, and therefore usually too late for any permanently remedial treatment, under structural and other conditions which he knows will prevent cure, but which he, as a mere Poor-law doctor, has no power to prevent. Meanwhile, he sees the medical officer of health in go-ahead districts advancing from point to point, starting this and that promising experiment, with municipal hospitals, bacteriological laboratories, Roentgen ray treatment, milk dispensaries, school clinics, and what not, obtaining not only all the honour and glory, but apparently unlimited scope, at the public expense, for really useful service of the State.

Now the two Reports of the Poor-law Commission agree in recommending the prompt and complete *destruction* of the present Poor-law system, the abolition of the workhouse, and the abandonment of the well-known "principles of 1834." But they differ vitally in what they propose to construct. The Majority Report proposes that the Poor-law medical service shall continue in England and Wales separate from the public health service, under a separate local authority, and that it shall remain rigidly restricted to attendance on paupers. It follows (as is inevitable under any Poor-law authority) that the patients are not to be eligible even for medical treatment until they have become destitute, and, that the treatment must cease as soon as they cease to be destitute. Moreover, it is proposed that there should be, alongside the work of the Poor-law doctor, a great extension of the contract practice of provident dispensaries, in which as many people as possible are to be enrolled. The fees from these enlarged provident dispensaries are, however, not to be secured to the Poor-law medical officer; they are to be shared among all the doctors of the district, including any newcomers who may be attracted by this bait, according to the number of patients who honour them with their patronage—for everyone, even the pauper, is to have free choice of doctors. The district medical officer will thus find his professional work dwindling, for the competition will be increased, and it will often not be the "parish doctor" who is preferred; and the chance of any improvement in salaries will therefore not be great. Indeed, it is expressly contemplated in the Majority Report that the new Public Assistance Authority will find the duties of the district medical officer gradually dwindling away, his work being more and more taken from him, so that, after more or less lingering, he will be, without abolition of office and therefore without compensation, wholly got rid of.

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[1] A paper read at the annual meeting of the Poor-law Medical Officers' Association of England and Wales, held at the Guildhall, London, on July 6th, 1909.

The Minority Report proposes, on the other hand, that both the Poor-law medical service and the public health service should be merged in a new county medical service, working under the supervision of an enlarged health committee of the county or county borough council. Into that county medical service would come all the different branches of medical practice that are or may be maintained at the public expense—the isolation and other public hospitals, including the existing workhouse sick wards and the Poor-law infirmaries; the domiciliary or dispensary work of the district medical officer; the whole public supervision of, and whatever public provision is or may eventually be made for, maternity and infancy up to school age; the county homes for the aged needing institutional care, and whatever county institutions may be provided for the crippled and the incapacitated; the milk clinics, the bacteriological laboratories, and the elementary and public secondary school inspection and doctoring; the examination of candidates, the certification and the medical treatment required by all the public services in the county; and the general sanitation of the whole district. Only by some such unification into a county medical service, it is suggested, can we put a stop to the very serious overlapping and duplication between the different rate-supported medical services that is now so rapidly increasing. Only by some such unification can we prevent the Poor-law medical service from being more and more definitely restricted in the scope of its work, and from being more and more overshadowed by the growing public health department.

It is, I think, clear that under such a county medical service, which sooner or later is bound to come, there will be no question of all the work being done by one medical officer. There will be needed all sorts of medical practitioners. To say nothing of the subordinate staff of minor health officers and nurses which would be organised under medical supervision to the extent required by the circumstances of each part of the county, there would be the domiciliary and dispensary practice which the community is bound to maintain for those who cannot pay a remunerative fee to the private practitioner. This would doubtless remain in the hands of the present district medical officers until the occurrence of vacancies permitted a re-arrangement of districts. There would be no disturbance of the rights or positions of existing officers. Probably as the existing district medical officers retire, or to the extent that they may choose to exchange their private practice for a salary and the prospect of a pension, the future will see the private practitioner relieved of all necessity for taking on the laborious and underpaid Poor-law work (like other contract practice) *merely in order to keep out interlopers*. We may contemplate the district medical officer of the future as invariably a whole-timer, absolutely debarred from private practice, properly salaried and pensionable, and provided with a county motor-car to enable him to cover a large district whenever he is summoned by telephone by the local nurses, dispensary attendants, and minor health officers whom the county employs, leaving the private practitioner of the future free to monopolise all the paying practice. Alongside this domiciliary and dispensary service of the district medical officer there would be an institutional branch of the county medical service (into which the district medical officers would be promoted) of medical superintendents and resident medical officers of the various kinds of public hospitals, convalescent homes, phthisis sanatoriums, homes for the aged, institutions for the incapacitated, and what not, into which the present Poor-law and public health institutions of the county would be differentiated. This branch, of course, would be in the main—though not to the exclusion of consulting physicians and surgeons—a whole-time service, recruited largely from the district medical officers of all the counties, debarred from private practice, with adequate salaries and pensions. Alongside these two branches of the county medical service there would be a third, the special sanitary service, probably not localised, but visiting the various parts of the county as required, using the greater mobility now afforded by the motor-car, and discharging such of the duties of the medical officer of health as were not combined with the domiciliary practice of the district medical officer.

Finally, there would be at the head of all, in general charge of the whole medical staff and medical institutions of the county, the county medical officer, probably aided, in the larger counties, by one or more assistants serving, so to speak, on his staff, and representing, probably, different branches of the county medical service. The county medical officer, who would hold a very highly paid and responsible post, and his assistants, who would likewise be whole-timers of lifelong experience, would, in fact, be chosen indiscriminately from any of the three branches of the county medical service, the chance of promotion to the highest posts being thus open to any medical men, whether district medical officers or institution superintendents, clinicians or sanitarians, who developed not only professional but also administrative ability. For it is a great mistake to suppose that the county medical officer need be, or ought always to be, a sanitarian. At present, it is true, the medical officer of health with his D.P.H. is apt to get all the plums, but this is just because the Poor-law medical service is kept outside *as* a separate Poor-law service, in which there is no possibility of advancement. I see no hope of improvement so long as this isolation continues. But the sanitarian has, from the standpoint of county administration, often grave defects. From his lack of experience he sometimes forgets to allow for the difficulties of domiciliary practice. He is apt to leave out of account the very stubborn feelings and prepossessions of the average man, who will not be dragooned into health. He runs the risk of falling behind in his professional knowledge, so far as clinical work is concerned. On the other hand, there are growing up in the Poor-law medical service many men who join high professional qualifications and great range of experience with administrative training as the superintendents of Poor-law infirmaries larger than most voluntary hospitals; or as conducting domiciliary and dispensary practices of greater range and extent than the majority of those who are only private practitioners; or as the resident medical officers of workhouses of gigantic size, in which they have to deal with every age, from infancy to senility, and with every possible case, from childbirth to cancer, from tubercle to typhus.

I venture to think that the part played by the Poor-law medical service in the future county medical service will be one of dignity and importance, and that the early creation of such a unified service, as advocated in the Minority Report, offers the only practical means of putting an end to the very unsatisfactory position in which all sections of the Poor-law medical service now find themselves.

RUSSIAN CONGRESS ON THE BLIND.—At the second Russian Congress on the Blind, which was opened on June 2nd, Mr. M. I. Reich said in a paper "On the Causes of Blindness in Russia," that in European Russia the number of blind is greater than in the remaining governments of Europe, it being 20 per 10,000 of the population. Over 20 per cent. of the blindness was caused through glaucoma and 19 per cent. through trachoma, which proportion compared with other countries is very striking. Other causes were small-pox and suppurating inflammation of the eye in new-born children. He held 45 per cent. of the cases to be preventable and mentioned vaccination against small-pox as one of the most important preventive measures.

Medical Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Plea for a Rational Puerperium.—Minute Anatomy of the Pregnant Tube.

A MEETING of this society was held on July 14th, Professor W. STEPHENSON (Aberdeen), the President, being in the chair.

Dr. F. W. N. **HAULTAIN** read a paper on a Plea for a Rational Puerperium, a record of 100 cases. He had for years thought that the conduct of the puerperium had simulated more that of the convalescence from a severe illness than the management of the sequel of a normal function. After reading von Alvensleben's paper he felt he had some foundation to go upon against popular prejudice and fashion. The mode of management adopted was as follows. The puerpera, if willing, was encouraged to sit up in bed to meals on the second day. As early as she felt inclined thereafter she was allowed to leave her bed and walk to the fireside, where she sat for an hour; on the following day this was repeated morning and evening. The next day two hours morning and evening were spent out of bed, the patient sitting and walking a little if she so desired. The fifth day after rising was practically spent out of bed with the exception of a few hours' rest in the afternoon, and on the tenth day the patient left the hospital. 100 cases followed this line of treatment, all of whom sat up in bed on the second day, 40 rose on the third day, 35 on the fourth, and 25 on the fifth day. Of the 100 cases 47 were primiparæ and 53 multiparæ. Each was carefully examined before leaving the hospital and as many as possible six weeks later. The morbidity in these cases—i.e., a temperature over 100° F. or a pulse over 90 for 12 consecutive hours—was represented by three cases; two developed infective temperatures on the third day, one left the hospital on the sixteenth day, and the other on the twenty-eighth day. Routine examination on the day of leaving the hospital showed the pelvic organs to be normal except in two cases where a slight retroversion of the uterus was present. In one there was considerable varicosity of the legs, but the woman remarked it was not nearly so bad as after previous confinements. All the cases examined six or more weeks after (43 cases) showed involution to be thorough and the position of the uterus normal except in the two cases previously mentioned. The women were uniformly eulogistic in their commendation of the treatment, and the multiparæ having the opportunity of comparison gave it most convincing approval. Was there any advantage to be gained by this radical change in the treatment of the puerperium? Most women after their confinement had during a normal puerperium a feeling of well-being, and it did seem hard to condemn them to ten days or even three weeks of absolute confinement to bed; it savoured rather of punishment for becoming pregnant than of reward for replenishing the earth. Labour was not a disease; the puerperium could not be considered a convalescence; it was merely a natural return of the parts connected with pregnancy to their normal condition, in which was mainly concerned the involution of the uterus and the readjustment of the pelvi-abdominal circulation. Involution was influenced probably by the circulation and was mainly directed by a nervous mechanism which was chiefly sympathetic in nature. The pelvi-abdominal circulation was mostly affected after labour by intra-abdominal pressure and in the fall of pressure after labour the veins were much distended. Exercise of the abdominal muscles would improve their tone, accelerate the abdominal circulation, and diminish constipation. The pathological complications might be classed under four heads: septic inflammation, uterine displacements, subinvolution, and venous derangements. Septic inflammation could not be caused by the position of the patient; but if it had occurred then more free only be effected slightly by the position and it was reasonable to suppose that the improved abdominal circulation would act in a salutary manner. Uterine displacements were affected by position, as when lying on the back the weight of the uterus must stretch the round ligaments and predispose to retroversion. The erect posture tended, on the other hand, to accentuate the normal forward inclination of the fundus by pressing it downwards on the pubes. Venous derangements, especially of phlebitis and embolism, were dreaded as a result of early rising, these occurring mostly after the tenth day. The blood of a puerperal woman was highly fibrinous and to prevent coagulation the circulation should be stimulated. This was most readily done by muscular exertion, by the use of abdominal and leg muscles, which would reduce the dilatation of the veins and improve the sluggish circulation. Maintenance of rest for ten days led to general muscular atony and debility; by rising on the third day there was little loss of general muscular power and constipation was strikingly diminished. It was difficult to understand why women should have been condemned for thousands of years to so much enforced idleness. In primitive races it did not exist. It seemed to have resulted from the religious practice of the ordeal of purification.

Dr. J. **HAIG FERGUSON** said he was not quite convinced by the very plausible arguments in the paper. In America it was found that there was deterioration of the white women compared with the squaws; these latter would fall out on the march, give birth to a child, and resume march on the same day. The white women had more sense. The native women suffered more from displacements and grew old very soon. He agreed with the principles in the paper to a certain extent. He considered the chief use of the binder was to fix the loose joints in the pelvis after labour.

Dr. A. H. F. **BARBOUR** considered the paper of general interest and revolutionary. The subject was introduced by Küstner 11 years ago, giving the results of 1000 cases, but was dropped, and it had again been brought forward within the last two years, the principles being applied both to the puerperal patient and to treatment after operations. Such treatment helped the general condition, the patient acquired more confidence, took her food better, and thus improved. But the local results were not so satisfactory. It was not proved that involution was favoured nor that the lochia were improved, and the question of backward displacement was very important. In the most recent paper 16 out of 46 had a retroversion or retroflexion afterwards. One must remember that if they were even up eight hours, still they were resting the other 16 hours in bed. Three classes of patients must be considered in this question. First, the labouring class in the Maternity; such treatment was the best thing for them, because they could be watched in the ward; it was more pleasant and comfortable for them. A second class was the working woman in her own house; it was best to keep her in bed to prevent her doing house-work. The third class of better patients, who in the development of civilisation were certainly not primitive, were best kept in bed for rest and to keep them out of the interests of life.

Dr. J. **LAMOND LACKIE** could endorse practically all that Dr. Haultain mentioned in his paper, having assisted at the Maternity during the same period. All the multiparæ declared themselves much better than in their previous labours. The treatment was not carried out in severe forceps or abnormal cases, only in simple ordinary cases or easy forceps, but even cases with a slight tear were allowed up. He found great difficulty in introducing this treatment into private practice, the greatest obstructionist being the nurse, as her term of service would be curtailed.

Dr. J. W. **BALLANTYNE** believed it would introduce a new element of danger in a ward, as a patient might thus spread infection if she had any about her. Küstner's paper 11 years ago was buried by Olshausen's disparaging criticism.
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claim diminished risk of embolism. Wagener and Gellhorn quoted their experience of Javanese women, who were compelled by a custom to rise for a short time on the first day and move about the house, that among these women prolapse was exceedingly common and embolism frequent. Dr.

Ballantyne believed in a modified adaptation of the treatment.

Dr. W. FORDYCE considered that the results could not be estimated after 10 days. He did not consider Dr. Haultain's physics of the pelvis correct in the production of prolapse. The paper was too severe on the moderate conduct of the puerperium.

Dr. D. E. DICKSON (Lochgelly) said he practised among a population of hard-working women. There were two classes, one which looked upon their confinement as their annual ten days' holiday, and the other class who grudged a few days from their household duties and who usually got up on the third day and did a little household work, and did it all on the tenth day. The results of all these cases were good, as out of 1200 cases he had few displacements or bad sequelæ.

Dr. HAULTAIN, in reply, said there was no hustling with these patients; he asked them first if they wished to get up, both in maternity and private practice. He had examined 43 cases after six weeks and found two displacements. He believed quick rising favoured involution. He had written to medical men at work among the natives of Central Africa, India, and America, and had obtained favourable answers as to this practice among these women. He found that it was usually the mother of the puerpera who objected, not the patient herself.

Dr. JAMES YOUNG gave a lantern demonstration on the Minute Anatomy of the Pregnant Tube, as illustrated by five cases. In one case of a two months' gestation the ovum had developed in the posterior wall of the tube, the anterior wall not being involved, and the fimbriæ were retracted; there was well-marked decidual formation in the tubal folds throughout the entire length of the tube. In another case the ovum was surrounded by a blood mole; this blood was entirely extra-chorionic and contained only a few fœtal blood cells The villi were degenerated but where their tips projected into fluid blood they were well nourished, showing the parasitic nature of the villi and throwing light on the possibility of growth of the placenta after the death of the fœtus. The retraction of the tubal fimbriæ was explained by an over-riding of the mucous and inner coat of muscle over the rest of the tube wall, leading to a withdrawal of the fimbriæ within the tube lumen.

Reviews and Notices of Books.

The Making of Species. By DOUGLAS DEWAR, B.A. Cantab., F.Z.S.; and FRANK FINN, B.A. Oxon., F.Z.S., M.B.O.U. With 15 illustrations. London: John Lane; New York: John Lane Company. 1909. Pp. 400. Price 7*s.* 6*d.*

THIS is a very interesting book, and we may start by recommending the reading of it to medical men as an excellent way of making themselves familiar with the modern position of biology. It is simply and clearly written, the material is well arranged, and the illustrations, which are quite good, also display the points which they are intended to illustrate—a thing which does not invariably occur in popular books of science. For although Mr. Douglas Dewar and Mr. Frank Finn have written a book which shows them to be not only tried and successful zoologists but close students of the best scientific literature, their joint work falls under the title of popular. It is not a book to which Professor De Vries, Professor Bateson, Mr. Frank Darwin, Mr. Karl Pearson, Mr. Frank Beddard, and other leaders of biological science will go for light and leading; it is rather a book which explains the tenets of the various schools of biology, the theories put forward by the leaders of those schools, and the work which has been done or which has been attempted by those who are supporting one or other theory. We have here definitions—which in all their details may not quite be acquiesced in by the different persons whose work is thus categorised—of the Darwinians, Lamarckians, the Neo-Darwinians, the Neo-Lamarckians, the Wallaceites, and the Mendelians. The salient doctrines of these schools are fairly set out, and the places where the particular schemes of biological thought can be found either to explain or to leave unexplained the phenomena of natural history are indicated in plain language, and even a little aggressively. But the attitude adopted by the authors is consistent throughout and justified by the last sentence of the book, which is as follows: "The future of biology is largely in the hands of the practical breeder." For that is the message which they mean to convey.

Mr. Dewar, an Indian civil servant, has already shown himself in his writings to be an authority on ornithology, while Mr. Frank Finn, whose work has also lain largely in the realms of ornithology, has held a position in the Natural History Museum of Calcutta. It is natural, therefore, that a good many of their personal observations should deal with tropical birds, and throughout the book many of the examples given of inheritance, colouration, and the signs and symptoms of variation and hybridism are drawn from bird life. We think it possible that, although the authors are obviously close students of biology generally, they have not given the same attention to the work of the Mendelians—albeit this work is distinctly in support of the practical breeder—that they have given to the life-history of birds. The value and importance of Mendelism may, as they suggest, have been exaggerated, but it is rash to set limits to work the scope of which is increasing almost daily. But the net result of the book is to suggest that natural selection has been worked too hard, especially by Mr. A. R. Wallace, who has attempted to explain too much under this head, and, like his immediate followers, has not given sufficient credit to other possible factors in the creation of new species. In this connexion a happy comparison is made of natural selection to a competitive examination in which it is suggested that natural selection, while tending to diminish the number of species which might arise from mutation by weeding out many mutants, does not of itself make new species, which rather originate in accordance with the laws of variation. "Variation brings into being mutants, which are incipient species, but variation cannot determine their survival. It is at this stage that natural selection steps in But because natural selection allows certain mutations to persist, it is not correct to say that natural selection has caused these mutations or made or originated the species to which they give rise." Upon this view it follows that, in the authors' opinion, while natural selection counts for much, and while its influence on mutations should be frequently capable of simple explanation, we are still far from any real knowledge of evolution as a whole. It is necessary that we should know much more of the causes of variation and mutation than we know yet. To the observation and experiments of the practical breeder the authors combine to look for progress in this direction, and we think that they will find more men of science than they appear to imagine holding the same view as themselves, but certainly with one addition—namely, that the results of biological chemistry must be brought more into line with evolutionary research than is the case as yet.

A great deal of the ground in this book appears to have been covered by Professor Arthur Thomson in his excellent work "Heredity." The authors, whose reference to the labours of other writers is very full and generous, constantly refer to Professor Thomson's manual.

By What Authority? The Principles in Common and at Issue in the Reports of the Poor-law Commission. By JOHN H. MUIRHEAD, LL.D., Professor of Philosophy at the University of Birmingham. With an Introduction by Sir OLIVER LODGE, LL.D., F.R.S. London: P. S. King and Son. 1909. Pp. 90. Price 2*s.* net.

THIS is a reprint of a series of articles in the *Birmingham Daily Post*, written just after the issue of the Report.

The intellectual position of the author is sufficient guarantee of the value of the thought and the quality of the form, while additional force is afforded by the fact that Professor Ashley, one of the highest authorities on economics in the English-speaking world, has revised the proofs and made various alterations in the text. The articles do not deal with the whole contents of the Report, and they avowedly leave untouched the question of medical aid with which our readers are now familiar. Practically they are limited to the economic aspects of the Report, and especially to that part which deals with the question of unemployment, which Professor Muirhead describes as the kernel of the whole. To this side of the subject these articles form an admirable introduction, which can be commended to the many members of our profession who are seeking to formulate their ideas. The lucidity of Professor Muirhead's style and his detachment from party politics are marked throughout his pages.

In a short introductory chapter, published before the Reports of the Commission appeared, a sketch is given of the object and effects of the "New Poor-law" of 1834. Here the aim was to satisfy the claim of humanity that persons who are unable to support themselves should not be left to starve, but also "to secure that there should be sufficient in the conditions of acceptance of Poor-law assistance to deter unnecessary resort to it." The position of the pauper was to be less pleasant than that of other labourers, however poor. This principle has been persistently assailed by modern social reformers, and is entirely jettisoned by the latest Commissioners. In his consideration of the effects of the "New Poor-law" Professor Muirhead is kinder than most critics, who have recently ascribed a deliberate malignancy to the framers of the Act, as if they had foreseen all its difficulties and shortcomings, and intentionally fostered them. On the contrary, it is claimed here that a considerable part of the admitted amelioration in the condition of the working-classes is due indirectly to the Poor-law: a view with which we are very much in accord.

Both Reports of the recent Commission, it will be remembered, unite in condemning the mixed workhouse. The description of the social life of even the best of these institutions, as depicted in the Minority Report, may be sensational and in certain details open to cavil, but in substance it is unquestionably true. It is doubtful if the attack of the same group of Commissioners on the administration of outdoor relief is of equal validity; their criticisms might be applied in similar terms to the Old Age Pensions. The author, being a Birmingham man, of a city where civic and social organisation is very complete and where conventional methods of administration are not over-regarded, thinks the pictures of outdoor relief and its evils are too dark and that valuable work might still be done under the existing *régime* of the Poor-law by capable administration. His comments here form a thoughtful indictment of the Minority document which postulates the abolition of the present law, and we recommend our readers to make an opportunity for reading his words.

Coming to the chapters on unemployment, we are confronted with the causes of pauperism. Old age is the most important. The principal factors in lowering the age of wage-earning are the speeding up of modern machinery and the effect of trade union regulations. Recent legislation has undoubtedly had a bad effect also. The Minority Report examines this question carefully, and concludes that the tendency on the part of unions and employers to discard elderly workmen is unsound, and the conclusion is supported by Sir George Livesey. Chronic sickness is also an efficient cause of pauperism, and in particular tuberculosis and alcoholism. The remedies for unemployment as analysed by Professor Muirhead are decidedly disappointing, chiefly resolving themselves into the erection of labour bureaux and more stringent control of boy labour. But we are not prepared to take the dark view that such helplessness implies. Recent general improvements in public health, by alleviating the sickness which has just been alluded to as a principal factor in the pauperism due to unemployment, will, we believe, make their influence felt quite soon in a forcible manner.

LIBRARY TABLE.

A Manual of Minor Surgery and Bandaging (Heath), for the Use of House Surgeons, Dressers, and Junior Practitioners. By BILTON POLLARD, F.R.C.S. Eng., Surgeon to University College Hospital. Fourteenth edition. London: J. and A. Churchill. Pp. 488. Price 7*s.* 6*d.* net.—For 50 years fresh editions of "Heath's Minor Surgery and Bandaging" have been published with a regularity which indicates a steady demand and a uniform welcome on the part of generations of house surgeons and dressers. To state that this volume is the fourteenth edition is in itself an appreciative notice sufficient for the reputation of most books. But though the original character of this manual has been maintained, and much of its language comes back to our memory like verses from the classics, yet Mr. Pollard has amplified and modernised the whole text, while Dr. Dudley W. Buxton contributes a carefully written chapter on the administration of anæsthetics. The volume is about double the size of Mr. Heath's original book, and the real difficulty in arranging such a manual so as to reject the non-essential has now become very difficult. That modern methods are represented in its pages is shown by the good accounts of spinal analgesia, and of von Bier's treatment of infective processes of joints and tendon sheaths by artificial hyperæmia. Mr. Pollard might have given a little more space to the details of operations for adenoids considering their numerical importance. A certain lack of order and cohesion in the arrangement of subjects is a heritage from the original edition and is to some extent unavoidable, while an excellent index makes it less important than it might have been. The print and get up are excellent and the price is moderate, for there are over 250 illustrations of good quality. We can confidently advise the modern dresser to invest in "Bilton Pollard's Heath."

Notes from a Knapsack. By GEORGE E. WHERRY, M.A., M.C. Cantab., F.R.C.S. Eng. Cambridge: Bowes and Bowes. 1909. Pp. 312.—This is a collection of desultory papers republished from various sources, including our own columns. One or two of the articles have a surgical basis, but the author obtrudes his profession little, and these might almost with advantage have been omitted. There is a paper on the Oriental Mystery of Tongue Swallowing, but it throws no new light on a very doubtful array of statements. Most of this little volume consists of pleasant gossip, with a strong archæological leaning, describing walks in England and Switzerland. Besides his knapsack, the author carried an observant eye and a mind stored by years of varied reading. Something in the flavour of the writing recalls the English essayists of the early nineteenth century, who were all great walkers; and it is impossible to avoid the thought that walking, for walking's sake, produced mental attributes which are rarer now.

Notes and Thoughts from Practice. By W. J. TYSON, M.D. Durh., F.R.C.P. Lond., F.R.C.S. Eng., Honorary Physician, Victoria Hospital, Folkestone. London: John Bale, Sons, and Danielsson, Limited. 1909. Pp. 95. Price 2*s.* net.—This little volume is a collection of rambling notes and impressions which scarcely merit the form of a complete volume, though they would have been acceptable in the pages of a magazine. For there is much that is thoughtful and useful in Dr. Tyson's notes, but they are sometimes too familiar. The page on the danger of putting old people to bed is excellent for example, but surely the danger is well recognised. "Some Thoughts on Cases resembling Typhoid Fever" are suggestive, but they might with advantage go further afield and raise distinctions between true enteric fever and paratyphoid fever, and between ptomaine intoxications and bacillary cultivations in the intestine. "Foreign bodies in the eye are very common in Folkestone," says Dr. Tyson so, we believe, they are in all other towns. Such accidents are peculiarly common in the centres of engineering where steel lathes and other machine tools are employed, but surely not in Folkestone. Dr. Tyson quarrels with the ophthalmic teaching at our medical schools, and claims that it is too minute and specialised, and deals too much with the rarer conditions of the eye to the exclusion of the commoner ones. But it must be remembered that the teaching of ophthalmology, like other forms of teaching, is, or should be, an education, and that a student who is carefully taught to recognise the features of a rare or obscure eye condition is in a position to recognise a common or simple one; moreover, the failure to recognise dangerous and rare conditions of the eye causes more disaster to patients than do errors in any other department of medicine. Among the most interesting parts of the book are the remarks on appendicitis, the plea for the extension of local anæsthetics, and the notes on pneumonia and the soporific action of mercury.

Hernia: Its Etiology, Symptoms, and Treatment. By W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon to, and Demonstrator of Operative Surgery at, St. Bartholomew's Hospital, &c. Third Edition. London: Baillière, Tindall, and Cox. 1908.—This edition differs but little from earlier issues, and it is only necessary to say that it is the best practical book on the diagnosis and treatment of hernia suitable for the general practitioner. Many students when they pass their final examinations know all about the rare varieties of hernia, and the various methods of radical cure, but they are often unable to adjust a truss or to advise whether a truss should be employed or an operation be performed. This is exactly the book that will enable them, when in practice, to make up these deficiencies. The author almost apologises in his preface for saying so much about the non-operative treatment of hernia, but this is the very part of the treatment that is most required in text-books intended for those in general practice.

McQueen's Private Account Book. Arranged for one year's use, may be commenced at any time. For Country or City Gentlemen. Leicester: J. McQueen and Co. Price 10*s.*, post paid.—Medical men are generally not good men of business, and much of this is due to their want of knowledge of the method of keeping accurate accounts. Many of them manage more or less satisfactorily to keep the accounts of the practice, but private accounts are of almost equal importance if a practitioner is to know where he stands financially. This account-book should prove of real advantage to medical men, for it is admirably arranged, so that it is possible to see at any moment the exact financial position. The records for income discriminate between that from the profession, that from dividends, and that from other sources, and the expenditure is also divided up into several sections, such as household, servants, subscriptions, and professional payments. For every month there is a summary and a record of the condition of the bank account. A useful section is that of professional profit and loss account and income-tax statement. We commend the book to the notice of our readers.

The Annual Charities Register and Digest. 1909. London: Longmans, Green, and Co., and the Charity Organisation Society. Pp. cccliv.–696. Price 5*s.*——*The Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* London: Charles Griffin and Co. Pp. 352. Price 7*s.* 6*d.*——*The Public Schools Year Book.* London: Swan Sonnenschein and Co. Pp. 717. Price 3*s.* 6*d.*——*The Girls' School Year Book.* Same publishers. Pp. 594. Price 2*s.* 6*d.* net.——*The Englishwoman's Year Book.* London: A. and C. Black. Pp. 372. Price 2*s.* 6*d.* net.—To review or summarise year books is impossible, and the best thing we can do is to refer our readers who may require trustworthy information upon the charities, or the learned societies, or the public schools, or the occupations open to women in the United Kingdom to the pages of one or other of the books themselves. In the first of these volumes Mr. C. S. Loch's introduction on "How to Help Cases of Distress" is, as he claims, a reference book in itself, and not the least convenient part of it is the legal information concerning the Poor-law which it includes. The motto of Mr. Loch's society might almost be taken from the opening paragraph of one of the sections of this introduction. "Generally speaking, the test of the usefulness of charitable institutions is, whether or not they produce self-help in the recipients of their bounties and in the people at large." There follow a series of 16 articles on special branches of charitable work, of which Dr. T. N. Kelynack contributes two on the Arrest of Tuberculosis and the Care and Control of the Inebriate, whilst Dr. H. Rayner writes on Lunatics, Idiots, and Imbeciles. A review of the past year's charitable work is then given, followed by an account of the Charity Organisation Society, the rest of a bulky volume being made up of summarised information returned by all classes of reputable charities, which are classified according to their respective objects. In the main care and discrimination have been exercised in the choice of the institutions to be mentioned, and the eighteenth edition of the work will be found indispensable to all interested in the palliation and reform of many social evils.—Of the other books before us *The Year Book of the Scientific and Learned Societies of Great Britain and Ireland* contains a record of the work done by those bodies during the session 1907–08, including lists of papers reported in their proceedings and information concerning their objects and officials. The book is complete enough to include the medical societies attached to the various metropolitan and provincial hospitals.—*The Public Schools Year Book* contains particulars of the arrangements and teaching staffs of nearly 120 schools administered by governing bodies and forms a trustworthy guide for parents able and desirous to do the best by their sons. We note that it has been adopted as the official reference book of the Headmasters' Conference.—*The Girls' School Year Book* is a companion volume dealing in a like manner with the secondary education of girls in this country.—*The Englishwoman's Year Book* is a compendium of information dealing with all the activities of the woman of to-day, advising her on the choice of a profession or occupation, giving her information on the educational facilities at her disposal, and on the laws, the charities, and the institutions especially concerned in her interests. In discussing the profession of medicine for women the remarks of Dr. May Thorne on Medical Women and their Prospects at a conference held last year are quoted. They strike us as a fair statement of the position, although perhaps not very encouraging for the medical woman of average ability and without capital or influence. The same section includes a list of women practitioners of medicine.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B.; ALEXANDER MACALISTER, University of Cambridge; ARTHUR THOMSON, University of Oxford; ARTHUR KEITH, Royal College of Surgeons of England; and in this number by the late D. J. CUNNINGHAM, University of Edinburgh. Vol. XLIII., Third Series, Vol. IV., Part 4, July, 1909. London: Charles Griffin and Company. Annual subscription, 21*s*.—The contents of this number are: 1. The Topography and Morphology of the Human Hyoid, by F. G. Parsons, F.R.C.S. Eng. Amongst other features the author describes a curved bar on the anterior surface of the body joining the two lesser cornua and apparently corresponding to the basal part of the second visceral arch, and observes that the chondroglossus is a constant muscle and that the inferior lingualis does not arise from the hyoid; that the lesser cornua do not ossify until the fourteenth year, and never form synovial joints with the body of the hyoid, though they often do so with the greater cornua. The article is illustrated with eight drawings in the text. 2. The Arrangement of the Papillary Ridges on the Human Hand and Foot, by Walter Kidd, M.D. Lond., F.R.S.E., F.Z.S., with three illustrations in the text. 3. Abnormal Position of the Heart and Great Blood-vessels, associated with Transposition of the Viscera, by Adrian Stokes, B.A. Trinity College, Dublin, with three figures in the text. 4. A Note on a Large Intra-abdominal Pelvic Colon and on the Etiology of Peritoneal Adhesions, by Douglas G. Reid, M.B. Edin., demonstrator of anatomy in the University of Cambridge (Trinity College). 5. Note on an Anomalous Anastomosis between the Internal Carotid and Basilar Arteries, by G. Elliot Smith, M.A. Cantab., M.D. Syd., F.R.S., Cairo, with a figure in the text. 6. A Gland upon the Ear-conch of Dasyurus Maugei, by R. H. Burne, M.A., assistant conservator, Royal College of Surgeons of England, with three drawings in the text. 7. A Contribution to the Development of the Prostate in Man, by Evelyn John Evatt, University College, Cardiff, with eight illustrations. 8. Two Abnormal Sterna in Living Subjects, by Professor A. M. Paterson, Liverpool, with two figures in the text. 9. A case of Abnormal Right Subclavian Artery, by E. L. Pearce Gould, B.A., with three figures in the text. 10. A Contribution to the Histology of the Human Osseous and Membranous Labyrinth, by Sidney Scott, M.S. Lond., F.R.C.S. Eng., with 21 highly creditable illustrations. 11. A Liver exhibiting Multiple Anomalies, by E. Barclay-Smith, M.D. Cantab., with an illustration. Lastly, there are two Anatomical Notes, one by Mr. N. Bishop Harman, on Spectacles for Fine Dissections, and one on a case of Hernia of the Adipose Capsule of the Kidney, by D. G. Reid, M.B. Edin. The number contains in addition the Index of Vol. LXIII., the Title, and Table of Contents.

Heart: A Journal for the Study of the Circulation. Edited by THOMAS LEWIS, M.D. Lond. Vol. I., No. 1. London: Shaw and Sons. 1909. Subscription price per volume 20*s*., single numbers 5*s*. 6*d*. each.—We have already published an annotation welcoming the appearance of this the first number of *Heart*, giving brief notices of the papers contained in it, and referring to the prefatory note contributed by Dr. W. H. Gaskell and to the editorial preface. The papers contained in this number are: 1. The Irregularities of the Mammalian Heart observed under Aconitine and on Electrical Stimulation, by Arthur R. Cushny. An interesting analysis of the various irregularities induced by aconitine is given. These comprise reversal of the rhythm, a condition in which the impulse to contraction is generated in the ventricle and spreads up to the auricle; irregularities from impairment of conduction in the auriculo-ventricular bundle leading to partial or complete block in either direction—viz., from auricle to ventricle or *vice versâ* in reversed rhythm; alternation in strength of the contractions; extra-systoles in auricle or ventricle, sometimes occurring at regular intervals and producing the condition of "continuous bigeminus" described by Hering; and sudden changes in the rhythm of the whole heart. These effects are attributed to the aconitine retarding the recuperation of the contractile and conductive power, while it increases the tendency to spontaneous movement—i.e., it increases irritability. Some irregularities induced by electrical stimulation of unpoisoned hearts are also described. 2. Nodal Bradycardia, by James Mackenzie. From a study of the venous pulse Dr. Mackenzie has demonstrated a disturbance of the cardiac rhythm in which the auricle no longer contracts at its normal place in the cardiac cycle. He has brought forward evidence that the stimulus to contraction originates in these cases in a situation other than the normal, and he suggests that this may be the node from which the auriculo-ventricular bundle runs. He has therefore termed this condition "nodal rhythm." In most cases the nodal rhythm is associated with an increased rate of beat, but in this paper a condition of bradycardia is described which is believed to be related to the nodal rhythm and which is differentiated from heart block. Dr. Mackenzie gives illustrative cases, in some of which epileptic manifestations occurred. 3. Paroxysmal Tachycardia, by Thomas Lewis. An interesting study of this obscure condition is given, with detailed instrumental records of one case and descriptions of others. Two forms are differentiated, one an auricular form in which the sequence of contraction in the chambers is normal, and the other in which the auricle does not contract at its usual position in the cycle. In the auricular form, with which Dr. Lewis chiefly deals, the rhythm of the paroxysm is described as being *sui generis* and differing from that in the intervals between the paroxysms. Although extra-systoles may occur in this form they are not regarded as the basis of the paroxysm. Evidence is brought forward which tends to show that the paroxysm is due to intrinsic changes within the heart rather than to disturbed central innervation. A ventricular form of paroxysmal tachycardia can be produced in animals by ligation of the right coronary artery. 4. The Measurement of the Systolic Blood Pressure in Man, by Leonard Hill, with the cooperation of Martin Flack and W. W. Holtzmann. This paper contains a record of further work concerning the vexed question as to whether the rigidity of the arterial wall may be a source of error in observations made by instruments of the Riva Rocci and Hill and Barnard type. Dr. Hill concludes that there is no evidence that the resistance of the arterial wall to compression affects the systolic index of blood pressure, but he finds that the relative softness or hardness of the arterial walls affects the "conductance" of the systolic wave markedly and so modifies the readings. The arm and leg readings are the same in young men when quiet and in the horizontal posture. The arm and leg readings differ after the violent exercise of stair-climbing and in aortic cases. A difference between arm and leg readings is most marked in all cases of aortic regurgitation, and when such patients are lying quiet in bed this difference is a diagnostic sign of aortic regurgitation.

The Bio-chemical Journal. Edited by BENJAMIN MOORE, M.A., D.Sc., and EDWARD WHITLEY, M.A. Vol. IV., Nos. 3, 4, 5, 6, and 7. April 26th and July 2nd, 1909., Liverpool: Johnston Laboratories. Price 15*s*. per volume of 480 pages. —These numbers of the *Bio-chemical Journal* contain several articles of importance, amongst which we may notice that of Dr. E. W. Wace Carlier of Birmingham on allyl isothiocyanate, which he shows exerts in the rabbit a powerful depressor effect on both the heart and the respiration very quickly after administration, the inspiratory efforts exceeding the expiratory, the effect with moderate doses soon passing off. This drug cannot be recommended for internal use. Dr. W. Webster of Manitoba treats of choline, and finds that none can be detected in normal blood and does not regard its presence in minute quantity in the cerebro-spinal fluid as indicative of degenerative changes in the nervous system. Dr. Karl H. van Norman of Toronto discusses the value of the biuret reaction in the recognition of protein, and points out that to obtain satisfactory results the solutions of albumin, copper sulphate, and sodium should be of definite strength, the best being albumin in distilled water 0·2 per cent., sodium hydrate 10 grammes to 100 cubic centimetres of water, and copper sulphate 5 grammes to 100 cubic centimetres of water. The limits of delicacy with both the biuret reaction and with cold nitric acid are given. Dr. Benjamin Moore, the Johnston Professor of Biochemistry in the University of Liverpool, and Mr. Edward Whitley, contribute an article on the properties and classification of the oxidising enzymes and analogies between enzymic activity and the effects of immune bodies and complements—a long and carefully drawn up article giving the results of many experiments. Dr. Hugh MacLean, Carnegie Research Fellow, of Aberdeen, gives an account of a mon-amino-diphosphatide lecithin-like body in egg yolk, and also gives the results of his investigation of the nitrogen-containing radicle of lecithin and other phosphatides. Dr. A. C. Hof, Höchst a. Main, states that iodo-eosin is a test for free alkali in dried-up plant tissues. Dr. Benjamin Moore and Dr. R. Stenhouse Williams describe the growth of the bacillus tuberculosis and other micro-organisms in different percentages of oxygen. Mr. A. E. Jessup, Mr. A. C. Jessup, Mr. E. C. C. Baly, F.R.S., Dr. F. W. Goodbody, and Mr. E. Prideaux contribute a joint article on the electrical forces of mitosis and the origin of cancer. G. C. Mathison, Sharpey scholar, contrasts the several methods of estimating the amount of phosphorus in urine, preferring Neumann's method as modified by Plimmer and Bayliss. Mr. R. A. Robertson, Dr. James Colquhoun Irvine, D.Sc., and Miss Mildred E. Dobson, Carnegie scholar, contribute jointly an article on the polarimetric study of the sucroclastic enzymes in Beta Vulgaris. Dr. Ernest E. Glynn of Liverpool University and Mr. G. Lissant Cox supply some observations upon possible errors in the opsonic index.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) MERCURETTES; (2) ADRENALIN PREPARATIONS; AND (3) PITUITRIN.

(PARKE, DAVIS AND CO., BEAK-STREET, REGENT STREET, LONDON, W.)

1. Mercurettes offer a very convenient form to the physician for administering mercury by inunction. They consist of oblong blocks each containing 30 grains of very finely divided mercury incorporated with 60 grains of cocoa butter. Cocoa butter appears to be well adapted for the purpose as it is free from objectionable odour, its consistence is convenient, and it rarely becomes rancid. 2. Amongst new adrenalin preparations may be noted tablets containing 1-200th grain of the hæmostatic. It is said that a prompt physiological effect is obtained when one or more of the tablets are placed under the tongue, the drug being rapidly absorbed in that area. Tablets are also prepared containing adrenalin with the anæsthetic novocaine, a combination of obvious value in certain surgical operations. Again, adrenalin is combined with chloretone in a suppository, the result being a medicament possessing constringent, analgesic, and antiseptic properties which render the suppository valuable in rectal disorders. Another suppository contains, besides adrenalin, three grains of formidin (an iodine, salicylic acid, and formaldehyde compound), three-quarters of a grain of cocaine hydrochloride, and three grains of extract of hamamelis. The formula is an excellent one, having regard to the effectual germicide (formidin) present, the analgesic (cocaine), and the tonic astringent (hamamelis). 3. The extract of the pituitary gland behaves like adrenalin, but its vaso-motor constrictor action is more prolonged, while its influence on the circulatory system is similar to that of digitalis and strophanthus. The dose of pituitrin orally or hypodermically is from 10 to 30 minims four times daily.

DIAMALT EXTRACT WITH COD LIVER OIL

(THE BRITISH DIAMALT COMPANY, 11 AND 13, SOUTHWARK-STREET, LONDON, S.E.)

We have already remarked upon the high diastasic value of this company's malt extract. According to our experiments diamalt digests nearly seven times its weight of starch at body temperature and as much as 13 times its weight of starch at higher temperatures. It is therefore not surprising that diamalt blends perfectly with a high percentage of cod-liver oil. Samples recently submitted to us yielded respectively 17·00 and 33·73 per cent. by weight of cod-liver oil. The excellence of the malt extract adds not a little to the palatability of the compound in spite of the oil. Altogether these preparations may be regarded as the standard of a malt and cod-liver oil combination.

ANTISEPTIFORM No. 2.

(CORBYN, STACEY, AND CO., LIMITED, BRUNTON'S WHARF, 673, COMMERCIAL-ROAD EAST, LONDON, E.)

Antiseptiform No. 2 affords an ingenious and convenient method of obtaining formaldehyde gas for the purpose of disinfection. It consists of a mass of soap saturated with methyl alcohol, and at ordinary temperatures the mixture is solid. On applying a light to the mixture contained in a tin the alcohol ignites. Next, a disc of platinised asbestos gauze is held over the flame until hot, and then pressed down upon it. The flame is extinguished and the vapours are acted upon by the spongy platinum—that is to say, a continuous current of formaldehyde gas is given off by the partial oxidation of the methyl alcohol. According to a bacteriological report before us the method can be effectually applied to the disinfection of rooms.

SOLOID PRODUCTS FOR IONIC MEDICATION.

(MESSRS. BURROUGHS, WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

We have received examples of soloid products which are convenient for the application of drugs by cataphoresis, or, to use the modern expression, ionic medication. Each soloid when dissolved in a fluid ounce of water gives a 1 per cent solution of the drug—that is to say, each product contains 4·37 grains of the drug. Amongst the ionic soloids submitted to us were sodium chloride, zinc sulphate, and potassium iodide, but others are prepared. The ionic soloid offers the important advantage of presenting a drug in a pure state, judging from the results of our examination.

RHINOCULIN CREAM.

(SCHACHT WARNER AND CO., 55, FORE STREET, LONDON, E.C.)

Any preparation which is calculated to relieve the distressing disorder known as hay fever would be welcomed by a number of sufferers. Such a property is claimed for rhinoculin cream, which is prepared after the formula of a physician in Germany. The favourable results which are recorded of its use in hay fever appear to be due first to the selection of a pure fatty basis which provides against the penetration of pollen into the mucous membrane and, secondly, to the employment of a non-poisonous local anæsthetic.

GLIDINE PREPARATIONS

(MENLEY AND JAMES, LIMITED, MENLEY HOUSE, FARRINGDON ROAD, LONDON, E.C.)

We have already referred in these columns to glidine, which is an interesting vegetable protein food resembling, as we pointed out, the gluten of wheat flour. We also mentioned a compound of glidine with iodine which suggested a means of administering iodine with advantage over the ordinary iodides. We have now received further glidine compounds containing the elements bromine, iron, mercury, and arsenic, known respectively as bromoglidine, ferroglidine, luesan, and arsan. According to some literature before us these somewhat remarkable preparations deserve attention, inasmuch as glidine appears to offer an excellent and effective way of administering the various elements indicated. The fact that these elements have been combined with such an innocent substance as wheat gluten is alone important.

PURE RECTIFIED SPIRIT

(THE POLISH POTATO GROWERS' AND DISTILLERS' ASSOCIATION AND THE WARSAW RECTIFYING COMPANY. REPRESENTATIVE FOR THE UNITED KINGDOM, J. JANASZ, 9, PERCY ROAD, BOSCOMBE, HANTS)

We have not examined a purer specimen of ethyl alcohol than the one prepared by the above commercial associations It is well known that alcohol obtained from potato starch by careful fermentation, distillation, and rectification yields the best results as regards purity and palatability. Alcohol derived from sugar and grain invariably contains traces of impurities which give a pronounced and often objectionable character to the taste. Beet spirit, in fact, has been known to contain a base of the nature of an alkaloid. It appears that in Poland the production of grain spirit cannot compete with that of potato spirit owing to the latter being considerably cheaper to distil in that country than the former. According to our analysis the spirit is not far off being absolute alcohol. The actual figures obtained were: alcohol, by weight 95·57 per cent., by volume 97·20 per cent. On examining the spirit for the common *impurities of ordinary spirit practically nothing of the kind* was found. It contained the merest trace of aldehyde, absolutely no furfural, and no higher alcohols of which amylic alcohol or fusel oil is the type. The absence of any odour or flavour apart from that of pure alcohol is remarkable, and the product is what distillers call an exceedingly "clean" spirit. In these circumstances the adaptability of such a pure spirit for medicinal and pharmaceutical purposes must be conceded. For analytical and research work also no purer alcohol can be obtained.

HYGEIA MINERAL WATER.

(THE ILKLEY BREWERY AND AERATED WATER CO., LIMITED, ILKLEY.)

This water is marked by its peculiarly palatable quality, it is fresh to the taste. According to our analysis it exhibits an alkalinity equal to about five grains of bicarbonate of soda per pint. It contains, however, besides bicarbonate of soda, the bicarbonates of the alkaline earths, magnesia and lime. Organically the water is pure.

COCOA AND CHOCOLATE.

(THE MAZAWATTEE TEA COMPANY, LIMITED, TOWER HILL, LONDON, E.C.)

Two specimens of cocoa were examined and the results showed a reduction in the amount of fat consistent with the digestibility of the products, while there was no evidence of the presence of added alkali. The total fat in the cocoa essence amounted to 33·00 per cent. and in the cocoa to 34·5 per cent. The mineral matter in the former was 5·70 per cent. and in the latter 5·50 per cent., while the alkalinity of the ash calculated as potash (K_2O) was 3·60 per cent. and 3·70 per cent. respectively. These results, coupled with the excellent flavour of the infusion, indicate the selection of a cocoa of high quality and the adoption of satisfactory methods of manufacture. Amongst the samples sent to us were also milk chocolate and some creams, both again evidencing the use of high grade cocoa in their preparation.

ENGLISH CREAM.

(H. FRANCIS AND SON, 11, ARTHUR STREET WEST, LONDON BRIDGE, E.C.)

The cream was contained in an air-tight tin, and on opening was found to be in a sound condition and uniform in quality. Considering that the cream had been sterilised the flavour was very satisfactory and approaching that of ordinary fresh cream. Analysis gave the following results: moisture, 63·75 per cent.; fat, 30·29 per cent.; curd and sugar, 5·58 per cent.; and mineral matter, 0·38 per cent. In the cream, which is a thick cream, we could find no foreign substances present.

Looking Back.

FROM

THE LANCET, *SATURDAY*, July 30th, 1831.

DUTY ON FOREIGN BOOKS.

To the Editor of THE LANCET.

SIR,—I have read with much pleasure in a late number of the *Westminster Review*, that the French government has proposed to that of England, a mutual exchange of all literary works of merit which may appear in each country. It must be admitted that this is a liberal proposal; but it would be a much more generous policy to remove *in toto* the tax on foreign books. The medical profession is not the only one that would derive considerable advantage from such a measure; and if our government would abandon this onerous duty, it would facilitate very much the opportunities for procuring the best continental authors, and thereby contribute to what has been sneeringly but not inaptly called "the march of intellect" This tax upon knowledge affords but a paltry addition to the revenue, but it is yet extremely exorbitant when levied upon private individuals. A few weeks ago I returned from the continent, and brought with me several foreign books, a certain duty upon which I was of course prepared to expect; but when passing them through the Custom House, I was obliged to pay the extravagant tax of a shilling *per pound* It is true that I had but seven shillings to pay, although I had several pounds weight more of foreign books, but I owed my escape either to the indifference or to the indulgence of the man who searched my trunks. He took out a French work on Hygiene, and an Italian one on medical jurisprudence, with two or three other small ones, and these altogether weighing seven pounds I was called on to pay seven shillings, which enhanced the original price of those books very much.

The plan of weighing is certainly a very ludicrous and barbarous mode of estimating the value of literature; *for* the more ponderous a book is, the more valuable and productive it is in the eyes of the Board of Customs. These censors never look at the *esprit* which a work contains, but at the quantity of paper or material in it; and the weight, but not the wit [illegible] its utility.

This [illegible] made the length [illegible] his wisdom and intelligence

By publishing the above you will afford a useful piece of information to those English students who are now on the continent, and who think, as I did, that they will have but threepence per pound to pay on the importation of foreign publications.

I am, Sir, yours, &c.,

VIATOR.

July 21, 1831.

THE LANCET.

LONDON: SATURDAY, JULY 31, 1909.

The British Medical Association: The Presidential Address.

THE address delivered by Sir WILLIAM WHITLA at Belfast in his capacity as President of the British Medical Association, although it dealt incidentally with many men and things of local interest and importance, was yet in the main a careful and serious pronouncement upon questions of high public and professional significance in relation to the conduct of medical education. Sir WILLIAM WHITLA, in the researches which culminated last year in his Cavendish lecture on the Etiology of Tuberculosis, has given ample evidence of his abundant power to grasp the scientific aspects of a popular question, and hence, when he turns away from the histories of bygone worthies, or from the claims to consideration of the city and the university which he adorns by his presence and guides by his example, in order to address himself to the changes in the conduct of medical education which are called for by the progress of knowledge, he is entering upon a path in which he possesses unanswerable claims to be accepted as a guide. When he tells us that the first duty of every medical school or faculty is the establishment of a radical reform in the now accepted curriculum, under which "the brain of the student fails to expand in assimilative power with the growth of advancing science," he formulates an indictment of existing methods to which those who are now engaged in applying or in supporting them will certainly be required by public opinion to plead. When, also, he tells us that a considerable proportion of medical students, either after failing to pass in the preliminary subjects of physics, biology, and chemistry, or before presenting themselves to the examiners in anatomy and physiology, proceed to attend classes in advanced subjects, and to go into the wards with the earlier examinations still hanging over their heads, we can hardly dispute his conclusion that such a course of procedure must "paralyse their capacities for obtaining anything like an efficient training in the subjects whose practice is to become their ultimate life work." He declares, indeed, that "after more than a quarter of a century's experience as a hospital teacher and as an examiner, embracing a practical acquaintance with the working of three universities in the United Kingdom," he feels constrained to believe that, in respect of sending out men qualified immediately to enter upon the routine practice of their profession, we are, in some respects at least, behind the results obtainable in the old days of apprenticeship. Such a belief will not appear unreasonable if we remember the testimony borne by many great men, and conspicuously by Sir JAMES PAGET, with regard to the practical benefits which a well-guided system of apprenticeship was calculated to confer upon the pupils, more especially in the way of preparing them to engage usefully in the daily work of the profession, even though existing circumstances make a return to the system of apprenticeship well-nigh impossible.

If we compare the educational requirements of the present day with those of previous centuries or generations, we shall perhaps find reason to hope that the collective intellectual capacities of the human race are being gradually trained in the direction of an increasing competence to deal with the many new problems presented to them. Exceptional individuals may perhaps be disregarded, for they have arisen at all periods of history and have seldom been fully appreciated by their contemporaries. They supply standards to which it is conceivable that mankind may ultimately attain, but which have no immediate bearing upon practical questions. We discuss contemporary dramatists without comparing them with SHAKESPEARE, and contemporary physicists without comparing them with NEWTON. But we may justly compare the beginning of the twentieth century with the beginning of the eighteenth, and if we do so we shall hardly fail to observe evidences of progress which afford just ground for hopefulness concerning the future. The intellectual culture of QUEEN ANNE's day was mainly through the elegant inaccuracies of the "humanities," and "exact" knowledge scarcely existed, save in the custody of a few geometricians. It was possible, of course, to verify a quotation; but "certainty" in the scientific sense of the word could scarcely be predicated of anything that was described as "learning," and close reasoning upon secure data was practically confined to the observatories of astronomers. There is no reason to suppose that the wits of the period, however brilliant, would have been capable of the minute examination of phenomena and of the sound judgments concerning causation which are daily accomplished by the men of science of our own time. In all probability the brain cells of the average man of education were deficient in directions in which they have since undergone some increase of development, and if this be so it is not unreasonable to assume that the educational methods which were sufficient for our ancestors are no longer calculated to produce the best attainable results in the cases of our descendants. The men of the present day, and of the days soon to follow, will be increasingly called upon to subdue the physical forces of nature to the service of their kind, and the mental faculties required for this purpose are of a different order, and must be called into activity in a different way, from those which would be concerned in furnishing a trope for Hudibras, or an appropriate classical quotation for a common room. It is true universally that "reading maketh a full man; conference a ready man; and writing an exact man;" but the qualities so described will be exercised about questions which were known to BACON, if at all, only through the inspiration of genius; and the faculties subordinate to them must now be developed in the manner best calculated to enable them to grapple with the new problems which all new knowledge is certain to bring in its train. The education of medical students should be systematically so directed as not only to supply them with the knowledge which they will be required to apply to purposes of practical utility, but also so as to train the faculties of their minds in the directions most favourable to the forms of mental activity hereafter to be required from them. Precise scientific information, valuable or even invaluable as it must always be, is yet inferior in importance to the cultivation of the judgment in relation to the authenticity of statements, and in relation to the true nature and characters of phenomena.

The measure of reform suggested by Sir WILLIAM WHITLA is set forth at length in his address, and will demand the careful attention alike of the medical corporations and of the General Medical Council. He proposes to anticipate the hoped-for arrival of better science teaching in public schools by a "radical change in the method of teaching the entire group of preliminary and scientific subjects," and by a complete devotion of the later period of the curriculum to clinical work. An important report on science teaching in public schools has lately been drawn up by the science master to the Charterhouse, and has been issued in pamphlet form by the Board of Education; but it cannot be said to afford any substantial grounds for hope that the schools themselves will take any active part in the institution of necessary reforms, or will move in the matter otherwise than slowly, and under an amount of pressure from public opinion which has not yet been applied to them. The report is based upon the replies to a circular of inquiries framed by the author in conjunction with the officials of the Board of Education, and it is significant that, while only one of the schools applied to sent a definite refusal to afford the desired information, quite a large proportion of them left courteous inquiries from a Government department wholly unanswered, and were presumably unable to answer them in a satisfactory manner. In the case of another profession in which the proficiency of its members is a matter of imperial concern, and in which, as in that of medicine, such proficiency is largely dependent upon training in the principles of scientific thought and judgment, as well as upon an acquaintance with scientific facts and methods, in the case, that is, of the Royal Navy, it has been found imperatively necessary that the future officer should be caught young, and that his training, from the first moment when he begins to specialise, should be conducted on lines completely in harmony with the duties of his future calling. We confess to a great doubt whether more than a small proportion of the medical students of to-day have been so trained, before entering upon their special studies, as to bring to them minds which have assimilated the first principles of scientific teaching, and are prepared to the full extent of their several capacities to judge wisely of the relations between phenomena. If this be so, the task of the teachers of medicine and surgery is rendered unduly difficult by the imperfect receptivity of their pupils, and some at least of these pupils, if or when they ultimately make their way through the meshes of examinations, are practically certain to have much to learn at the bedside, and are at least likely, in the course of the process, to exemplify the maxim of political economy which teaches that all learners spoil a portion of the raw material which passes through their hands. We may yet see the establishment of an institution having for its object to give the instruction necessary as a preliminary to hospital studies, and bearing to the medical profession something of the relation which the College at Osborne bears to the Royal Navy. The "science teaching" of an ordinary school usually occupies too subordinate a position in the curriculum to form an adequate preparation for lives which should be constantly conducted under scientific guidance.

The British Medical Association: The Address in Medicine.

THE annual meeting of the British Medical Association affords an opportunity for the presentation to large numbers of the medical profession of the results of new investigation and of a review or summing up of the present state of knowledge in the various branches of their science. In particular, the addresses in plenary congress are employed in this double capacity. During recent years the prevention and treatment of tuberculosis have taken a prominent place in scientific discussions, and the problems involved have been constantly brought before the public by means of the provisions proposed or adopted by local authorities in order to try and lessen the incidence of the disease. In his Address in Medicine Dr. R. W. PHILIP touched in a masterly manner on many points in connexion with the outlook of modern medicine on tuberculosis, and the summary which he gave of the forward movement which has taken place during the last 35 years is full of interest, and forms a useful introduction to the larger views on immunisation and the more advanced methods of therapeutics now being practised. He very properly pointed out that the physician and the sanitarian had joined hands, and had been aided not a little by educated social workers who recognised the vast part played by tuberculosis as an agent of national devitalisation and impoverishment. The report of the Registrar-General indicates the great fall in the number of deaths from this disease that has occurred during the last 50 years, the decline being mainly due, no doubt, to the improvement in sanitary matters that has been effected. It is only by a hearty and thorough coöperation on the part of the medical profession, their patients, and the public at large that any further diminution in the mortality from tuberculosis can be accomplished.

The natural way to attempt to stamp out a disease is, of course, to discover its cause and the manner in which it is spread, and then to take such steps as may best prevent these etiological factors from taking effect. Unfortunately, the dissemination of tuberculosis is too complicated a matter for easy prevention. Dr. PHILIP, however, drew attention to one feature in tuberculosis the importance of which in regard to etiology and prophylaxis cannot be exaggerated—namely, the frequency of tuberculous infection in childhood. The reason for this tendency has not yet been clearly determined. As in the adult, there are probably several causes at work, the two principal ones being the introduction of the pathogenic bacilli by respiration and the ingestion of food contaminated by the bacilli. The former for many years has been considered the main danger, and, as a consequence, the greatest care is now taken in the disposal of the sputum from patients suffering from pulmonary tuberculosis, and certain laws have been enacted, which we trust are being duly enforced, to prevent indiscriminate spitting in public places and conveyances. Recently, however, infection by the milk and flesh of tuberculous animals has claimed much attention, the former especially being blamed not only for the occurrence of the disease in young life but also for its appearance in later life, the germs of the disease having in the meantime remained latent. Dr. Philip raised certain well-founded objections to this view, one of the strongest being the fact that tuberculosis flourishes abundantly in not a few countries where feeding with milk from cows or other animals appears unknown. But he referred to another factor in the dissemination of tuberculosis the removal of which would, we believe, have as much effect in the prevention of the disease in childhood as any measure that could be introduced. The condition to which we refer is the relatively airless conditions of home and school life, especially amongst the poorer classes. He pointed out that the ratio of increase of pulmonary tuberculosis is greater about the time the child goes to school; also that one morbid influence seems constant throughout the progressive stages of the child's life—namely, the comparative withdrawal of the developing organism from the natural and healthful stimulus of the open air. These undesirable conditions do not only exist in the large towns. Those of our readers who have visited some of the villages in the Highlands of Scotland, or the small communities on the Devonshire or Cornwall coasts the inhabitants of which mainly obtain their living by fishing, may have noticed the anæmic, even unhealthy appearance of many of the children. Closer observation will show the large number of cases in which there are enlarged glands in the neck, or the scars marking the former presence of such glands. This condition may in part be due to improper feeding, but if the houses in which the children are brought up be visited the close and tainted atmosphere in which they sleep and spend a large portion of their time will at once suggest the most potent cause of their debilitated condition. Such homes may be indeed veritable "nests" of tuberculosis. Legislation directed to the removal of such houses would do as much to benefit the health of the community as the destruction of the slums in the large towns.

Dr. Philip proceeded at some length to consider the great principle of aerotherapy. He maintained that the application of this method of treatment had completely changed the clinical features of pulmonary tuberculosis, and even went so far as to observe that the classic type of disease as described from generation to generation in the past has ceased to be. Whilst not being able to corroborate Dr. Philip in such an advanced statement, we cordially support him in his contention that aerotherapy is the most satisfactory measure yet introduced for the treatment of certain types of cases, and even that it may be successful occasionally in apparently hopeless conditions. The best results, however, are obtained when the patients are able to indulge in graduated exercise and labour, a phase of aerotherapy which Dr. Philip does not refer to. Finally, he discussed tuberculin and vaccine-therapy and spoke in an encouraging tone of the results which he had obtained by the use of tuberculin, but he has not yet convinced himself of the value of controlling the administration of the remedy by means of the opsonic index. There is now ample evidence to prove that the value of tuberculin treatment was too hastily condemned shortly after it was first introduced in 1890. Many observers have since published their results, and all these hold out a promise of good to come, but the actual value of tuberculin and the most satisfactory method of its administration require further investigation. We have found Dr. Philip's remarks most interesting and suggestive. In discussing a subject of supreme importance to humanity in general he has drawn proper attention to the merits and defects of modern views, and this is the way to enable the medical profession to realise the results obtained and the problems which still remain for inquiry and elucidation.

The British Medical Association: The Address in Surgery.

It was a happy idea to select Mr. A. E. Barker to deliver the Address in Surgery at Belfast, for he comes from the north of Ireland and is, indeed, a Fellow of the Royal College of Surgeons in Ireland as well as of the English College. Mr. Barker has devoted much attention to the surgery of the abdomen and also to local and spinal anæsthesia, and these formed the main subjects of the address. When antiseptic surgery was first introduced its more enthusiastic supporters were inclined to over-estimate the value of the application of antiseptic substances, and at the same time to under-estimate the protective powers of the body against the assaults of micro-organisms. As Mr. Barker has pointed out, when surgeons first ventured to attack the contents of the abdominal cavity they were imbued with the idea that the peritoneum was one of the most vulnerable tissues of the body, but gradually it came to be recognised that it possessed wonderful powers of repair. This had been seen by some before the introduction of the practice of antiseptic surgery, but when the new principles were understood the powers of repair possessed by the peritoneum were for a time forgotten, and the successes obtained were ascribed entirely to the virtues of the antiseptics employed and the general cleanliness practised in the operation. Before long, however, the conviction was forced on the mind of the surgeon that as many cases of abdominal surgery had recovered before the days of antiseptics absolute asepsis of the peritoneal cavity could not be essential, because a certain amount of infective substance must have been sometimes left behind in the abdominal cavity without serious or fatal result, showing that the peritoneum must have been able at first to tolerate and later to remove completely the dangerous material. The more the pathology of intra-abdominal sepsis was studied the more clear it became that the powers possessed by the peritoneum of disposing of septic organisms must be very great, for otherwise no case of acute appendicitis, for instance, could possibly recover, and yet it was certain that many such cases did recover even without surgical interference. The natural deduction from these facts was that the peritoneum was not the enemy of the surgeon but his ally, always willing to assist him in dealing with septic organisms, a deduction which raised doubt whether it was desirable to use germicides freely within the abdominal cavity, for they might by damaging the peritoneum interfere with its inherent reparative powers.

Time has intensified our appreciation of the ability of the peritoneum to deal with a bacterial invasion; bacteriology and biology have furnished us with some explanations of the clinical facts, and at present we know something definite about the defensive powers of the peritoneum. The effusion of plastic lymph for the repair of a lesion or for the shutting off of an infected area is only a part of the capabilities of the peritoneum. We know now that under irritation it can pour out an abundant fluid, which dilutes the toxins present, and, moreover, that this fluid, like healthy serum, has the property of inhibiting or destroying bacterial growth. This power is not unlimited, and it not rarely happens that the bacterial invasion, either from its quantity or its quality, may overcome the protective forces of the peritoneum, but every year our opinion of the powers of defence possessed by the peritoneum is being enhanced, and we may learn some effective way of evoking these powers to the full. The practice of increasing the amount of blood and serum in a damaged part by means of poultices and fomentations is of great antiquity, but the biological mechanism by which hyperæmia acts in arresting septic processes has only recently received close study, and now we do not fear so much as formerly the hyperæmia of and effusion into serous cavities. Under the influence of BIER'S views on hyperæmia we increase intentionally the amount of blood and the effusion of serum in some affected areas, and we obtain the very best results. It has been conclusively shown that joint cavities swarming with certain bacteria may be rendered sterile by the hyperæmic treatment. It seems certain now that inflammatory effusions into the peritoneal cavity, induced by the presence of septic organisms, may be up to a certain point definitely beneficial. We are as careful as, even more careful than, before in preventing the entrance of micro-organisms from without during an abdominal operation, but we are more anxious now to avoid damaging the serous membrane by rough handling, by chemicals, or by the chilling of exposure, while we are much more hopeful and much bolder in practice when sepsis is already present in the abdomen. In proof of this Mr. BARKER quoted certain cases. For example, he operated about a year ago on a boy who had a tuberculous abscess in the left iliac fossa. A collection of fœtid pus was found in the midst of adherent small intestine, and as the finger attempted to separate them the bowel wall gave way. It was necessary to resect a considerable length of small gut in order to obtain healthy bowel for the anastomosis. All this was done without antiseptics in the presence of foul pus, some of which must have been left behind, yet Mr. BARKER thought it better to close the parietal incision without drainage. For some days pus oozed out between the stitches, but the discharge soon ceased and complete recovery followed. In another striking case a woman, 49 years old, had an internal strangulation. The abdomen was opened 20 hours after the onset, the patient being cyanosed and pulseless; fœtid greenish-brown fluid gushed out, and nearly five feet of gangrenous bowel had to be resected. Here, too, the wound of the abdominal wall was closed without drainage and perfect and permanent recovery followed. These cases showed clearly that the peritoneum was able to deal with the septic matter that remained after removal of the damaged bowel and the bulk of the effused fluid. Without a belief in the power of the peritoneum to deal with much septic material a surgeon could only look upon such cases as these as hopeless, and would probably abandon the operation. Any prolonged attempts to clean the peritoneal cavity would not only have been futile, but injurious to the defensive powers of the peritoneum. Mr. BARKER next referred to the fortunate issue of cases of cerebro-spinal meningitis as illustrative of the wonderful protective and reparative functions of the serous membrane enclosing the central nervous system when aided by the injection of antitoxin. The conclusions to be drawn from his words are that other serous membranes as well as the peritoneum have a very great power of dealing with infection, both bacterial and toxic; that it is not difficult to lower this natural protection by injudicious interference with the membrane itself; but that by removing some of the effused material, and by otherwise aiding the serous membrane in its conflict with the invaders, much good can be done.

Another subject dealt with by Mr. BARKER was spinal anæsthesia. He spoke strongly in its favour, and as he has had probably more experience of this method than anyone else in this country his conclusions are of great value. He expressed the opinion that the conditions under which operations are performed with spinal anæsthesia are immeasurably superior to those present when a general anæsthetic is used. There are absolute quiet and relaxation all over the field of operation, and these are of vast importance when delicate parts have to be accurately adjusted. At present surgeons are in a position of doubt as to the true value of this method and probably it is not employed to the extent it deserves, but there is justification for advancing slowly in this direction, as even those least willing to set bounds to the possibilities of surgical achievement must allow. Mr. BARKER is very hopeful of the future of surgery. To those to whom it may appear that we have reached, or almost reached, the bounds of what surgery can accomplish, Mr. BARKER says that what has been achieved is almost as nothing to what remains to be done. Certainly every year shows us new avenues along which progress can go, and though it is impossible and useless to attempt to indicate the exact directions of the further extension of surgery, we agree with Mr. BARKER that we are far indeed from the time when it shall be said that surgery has reached its limits.

Annotations.

"Ne quid nimis."

BRITISH PHARMACEUTICAL CONFERENCE.

AT the annual meeting of the British Pharmaceutical Conference, opened on July 26th at Newcastle-on-Tyne, an interesting departure was made from the practice which has been in vogue since the first meeting of the conference, 46 years ago. This will be seen by a report of the Conference which appears in this issue of THE LANCET. Hitherto, except for the observance of social duties, the work of the conference has been confined to the reading and discussion of papers on subjects relative to the scientific aspect of pharmacy, but on the present occasion a portion of time was set aside for the consideration of problems which, while they are perhaps more capable of understanding by the ordinary pharmacist than most of the scientific papers presented, are of such a character as the founders of the conference would have preferred to leave to some differently constituted body. "Should doctors dispense?" is a question which may be of interest to pharmacists, as is the cognate question, "Should pharmacists prescribe?" "Problems of the Poison Schedule" is a subject admirably adapted to debate, but it is questionable whether the value to be gained from such discussions compensates for the time which might have been devoted to the purpose for which the conference was founded—namely, the advancement of pharmaceutical science. The papers were quite up to the average of previous years, and some of them contained valuable suggestions of a practical character. For instance, prescribers will no doubt welcome the formula suggested for an improved ointment base to replace the unsatisfactory paraffin ointment at present official. The examination of a number of samples of malt extract and cod-liver oil discloses such an unfortunate state of affairs as to make it seem desirable in the interests of the public that some standard should be set up for this important preparation. From an economic point of view the contribution on the use of alcohol in pharmacy is one which should prove useful in the compilation of future editions of the Pharmacopœia. With a tax of 23*s.* per gallon on rectified spirit, apart from other reasons, it is very desirable that only the minimum of alcohol that is scientifically necessary should be used in the preparation of galenical preparations, and in this paper an experienced investigator showed that 24 tinctures could be prepared with alcohol of lower strength than that prescribed officially.

DEMORALISING FACILITIES.

EVERYBODY must recognise the advantages of cheap travelling, and the competition amongst those who undertake to convey the public from place to place is such as to reduce the cost to a minimum. In many cases, indeed, it is stated that the public are practically carried for nothing. The inducement to ride rather than walk is thus a temptation which continually confronts the public. It is not difficult to see in this a process which is calculated to lead to physical, and not improbably mental, demoralisation. If a man can reach his home by tramcar or omnibus for a ½*d.* he is not going to trouble himself about walking the distance. He thus loses, perhaps, daily a valuable and healthful form of exercise because travelling is so cheap. Formerly he walked the distance to save a relatively costly fare. The lift is another example of a modern innovation which encourages idleness, and which, indeed, threatens to make the staircase a superfluous and obsolete channel. This is very strikingly illustrated in a large hotel where the great palatial staircases constructed before the days of lifts are scarcely now ever used. Another example of the demoralising tendency of cheap transit is seen in the travelling platform which is designed to save so much walking. Everywhere machinery is devised to save physical effort as though we possessed no means at all for getting about ourselves. Surely this state of things cannot count for sturdiness and healthful activity in the future generation, but is more likely to lead to a state of atrophy which must react unfavourably on the individual. It is open to question whether the human race is better off for at any rate a number of facilities which are constantly thrown in its way. There are, of course, compensations, but not, we think, in all cases.

THE IDEAL PUBLIC-HOUSE.

THE eighth annual report of the executive committee of the Central Public-house Trust Association dealing with the year ending Dec. 31st, 1908, lies before us and contains matter of considerable interest. The object of the association, it may be remembered, is to promote temperance by the elimination of private profit from the retail sale of liquor and by securing to the public the monopoly value of licences. The report, though officially dealing with the year 1908, is dated June, 1909, and mentions a conference of Public-house Trust companies held in March, 1909, at which sundry main principles were accepted as to how Trust Public-houses should be worked. The chief of these is No. 7 which lays down that "the general arrangement and management of each Trust house shall be on the lines of a house of general refreshment and not of a mere drinking bar." This to our mind is the line along which temperance reform could run with the greatest certainty of securing widespread support from all thoughtful people. The report refers among other matters to certain faults in the licensing laws as illustrated by the conduct of the licensing magistrates in East London, where, although the licensing magistrates said that they thoroughly approved of the Trust system, yet upon a technical point they could not see their way to grant a licence to a particular Trust Company. However, despite difficulties with red tape, the association is doing good work, and we heartily wish its operations that extension which will enable it to carry out its aims in a wider field than is at present possible. Until, however, the intentions of the Government as to legislation are made plain, the directors are wise not to try to extend their business.

SUBLUXATION OF THE NECK.

IN the *Journal of the American Medical Association* of June 5th Dr. F. M. Sherman has reported two cases of subluxation of the neck—a comparatively unrecognised condition. He suggests that it is much more common than is supposed and that many cases which are diagnosed as "stiff neck" or torticollis from cold are examples of it. The position of the head is characteristic. If the articular process of one cervical vertebra is displaced forwards the head will be more or less tilted to the opposite side and may also be rotated towards it. This is the position in subluxation. But if the unilateral dislocation is complete, so that the articular process goes far enough to drop down in front of its fellow, the head will be turned towards the opposite side but tilted towards the same side. It is of interest that in both the cases the condition occurred during sleep and was noticed on awaking, the time when torticollis from cold usually is first observed. In the first case a girl, aged 19 years, awoke suddenly in much pain and unable to turn her head. The condition continued during the remainder of the night and on the following day, when Dr. Sherman was asked to relieve her "stiff neck." The head was tilted to and slightly turned towards the left. The muscles on the right side of the neck were tense. The spinous process of the fourth cervical vertebra was about half an inch out of line with the others. Under ether anæsthesia the method of reduction worked out by Dr. Walton of Boston was performed. The head was bent diagonally backwards and to the left and then rotated into place. At once the condition of the neck changed from rigidity to free mobility. On recovery from the anæsthesia the patient was completely relieved. However, deep tenderness persisted on the right side of the neck for several weeks. In the second case the patient was a young man who during the previous six months had twice had the same trouble in minor degree. On awaking he felt pain and stiffness in the left side of the neck. This grew worse during the following day. On examination the head was decidedly tilted towards the right. The left side of the neck was painful and tender and the muscles were tense. As the previous displacements had been spontaneously reduced Dr. Sherman determined to attempt reduction without anæsthesia. He found it somewhat difficult on account of spasm of the muscles but accomplished it with immediate relief. A stiff collar was applied and worn at night for some time. Some tenderness persisted for a few days. Dr. Sherman thinks that in the great majority of cases of subluxation of the neck the displacement of the articular surfaces is but slight, so that reduction takes place spontaneously.

THE INTERNATIONAL CONGRESS OF MEDICINE.

AT a meeting of the National Committee for Great Britain and Ireland held at the rooms of the Medical Society of London on July 22nd, with Dr. F. W. Pavy, the President, in the chair, it was proposed by Sir William J. Sinclair, seconded by Mr. L. Eliot Creasy, and carried, that the members of the National Committee be circularised as to the advisability of asking His Majesty's Government to invite the Seventeenth International Congress of Medicine to meet in this country. A report was made upon the appointment of official delegates at the Budapest Congress. It was also pointed out that members of the Congress who desire to travel with the party of the Royal Society of Medicine should communicate at once with Mr. J. Y. W. MacAlister at 20, Hanover-square, London, W.

A "SCHOOL CLINIC" FOR BRIGHTON.

THE Brighton education authority at its meeting on July 20th decided to establish a school clinic. When the Act of 1907, imposing upon every local education authority the duty of making provision for the inspection of children, was passed it was quite understood that in the first year or so of its operation little could be done beyond preparing statistical tables of what the school medical officers found. Remedial treatment is the natural corollary, and the education committee at Brighton, acting upon the advice of its medical officer, in conjunction with the medical officer of health, has decided to seek the necessary powers to have delegated to it the authority to provide such treatment in cases where it is required and to debit the ratepayers with the money so expended. But the Brighton proposal is a very modest one. Succinctly stated it is to provide a clinic where the work would be confined to the diagnosis and treatment of contagious skin diseases; to subscribe to hospitals in order to obtain an adequate supply of letters entitling school children to free treatment; and to provide spectacles. The amount to be asked for annually is £100, and it is proposed that of this sum £10 10*s.* should be given to the Sussex County Hospital and £5 5*s.* each to five other hospitals in the town so as to secure letters. Even with a maximum expense of £100 per annum only there was some little objection on the part of some members of the education authority, but they were overruled by another member who reminded the committee that the whole community suffered if the health of the child was bad. We shall watch with interest this step taken by the education authority of Brighton.

TUBERCULOSIS OF THE SUPRARENAL CAPSULES WITHOUT MELANODERMA.

IT is, perhaps, not sufficiently recognised that tuberculosis of the suprarenal capsules may prove fatal without any pigmentation of the skin. The condition, though pathologically similar to Addison's disease, wants the most characteristic feature in the description of that great clinician. It is important that the practitioner should be on his guard as to this possibility, for the diagnosis is easily missed and may be made only at the necropsy. Indeed, here, too, it may be overlooked, for the suprarenal capsules are not organs which receive much attention. Thus the warning given by medical jurists to examine them lest inquisitive questions be asked as to their condition in cross-examination has a very serious basis. At a meeting of the Société Médicale des Hôpitaux of Paris on May 28th M. Ch. Achard and M. Ch. Foix reported the following case. A thin and sickly looking chimney sweep, aged 20 years, was admitted into hospital on Dec. 14th, 1908. His father was dead and the cause of his death was not known. His mother was attending hospital for tuberculous lymphadenitis with suppuration and sinuses. The patient had never seriously been ill. He had ceased work three days before because of fatigue, vomiting, and abdominal pains, principally on the right side. A practitioner who saw him diagnosed influenza. The abdominal pain was not acute and was principally in the epigastrium and right flank; it consisted of attacks of "colic separated by intervals of tenderness." The abdomen was supple and not tympanitic. Pressure on it was a little painful everywhere, and especially in the appendicular region. There was constipation. The temperature was 101·3° F. and the pulse was 90. The face was emaciated and a little drawn; the eyes were a little sunken and surrounded with dark circles. A purgative was given and after a motion the patient improved and the temperature became normal. On the 21st he appeared to have recovered and was discharged. On the 28th he was readmitted because he was always in pain and repeatedly vomited. The face was emaciated and still more drawn. The abdomen was supple but was always the seat of dull pain which predominated on the right side and was increased by pressure. The temperature was normal and the pulse was 80. These symptoms continued until Jan. 5th, when the patient improved and was able to get up. From the 10th to the 14th the vomiting recurred, being sometimes alimentary, sometimes bilious. The patient was always fatigued and constantly felt pain in the right side of the abdomen. On the 15th he died suddenly. The necropsy showed no trace of tuberculosis in the lungs. The liver, spleen, kidneys, and intestines, in particular the appendix, were normal. The suprarenal capsules showed manifest changes. They were hard and easily removed. The right capsule was somewhat enlarged of 1906 with excellent results in syphilis, in daily amounts of 18 grammes, representing 6 grammes, or about 90 grains of metallic mercury. The daily amount should be regulated, according to the susceptibility of the patient, 10, 15, or 20 grammes being rubbed in daily on 30 successive days. The frictions should last about ten minutes, care being taken to rub slowly. Dr. Dupuy prefers to apply the friction at the bend of the limbs or on the inner surfaces of the thighs. It is preferable to abstain from washing the parts for several hours after each friction in order to facilitate the absorption of the mercury. The ease of absorption is shown by the fact that mercury has been found in the urine after applying the friction for five minutes and then washing the skin with soap and water. Although the results obtained with this preparation in syphilis were generally most encouraging, it did not materially relieve the dry, papular eruptions of this disease. Apart from syphilis, the oleobrassidate of mercury has been used with excellent results in parasitic affections of the skin, including pityriasis, which readily yields after two applications, followed by washing with soap and water.

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THE MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

IN a recent annotation[1] we announced the decision to which the Education Committee of the London County Council has come with regard to the immediate arrangements for the medical treatment of London school children at existing institutions, this decision being based upon the report of the Day Schools Subcommittee. It will be remembered that the consideration of this important matter was begun by the London County Council in July, 1907, when that body appointed a representative subcommittee, consisting partly of its own members and partly of members appointed by medical bodies and other institutions interested in the result to be arrived at, to advise as to whether the systematic medical treatment of London school children (the need for which had been rendered apparent by their medical inspection) should be undertaken by existing institutions or in institutions created *ad hoc*, that is, in special school clinics.

The report of this subcommittee, together with the observations made upon it by the Finance Committee, was presented to, and considered by, the Council during March and April last, and we reported these deliberations and their result in THE LANCET of April 10th, p. 1069. We will repeat the terms of the main recommendations then made to the Council by the Day Schools Subcommittee.

> (*a*) That, as the existing provision of [illegible]ivate and hospital practice sufficiently me[illegible] case of children requiring operative and [illegible]e thus removed from the direct purview [illegible] no further steps be taken in respect of this class.
>
> (*b*) That to supply the additional provision for the medical treatment of school children which has been found desirable, the Council should utilise institutions of the types now existing, giving financial help, if necessary, and receiving special facilities in return for any grant of public money, but that in districts where no suitable institution exists, and where within a reasonable time it shall have been found impossible to make the necessary provision by an extension of existing institutions, the Council should consider whether, in default of other *means*, it shall make the provision itself, and that it be referred to the Education Committee to report further on the matter.

It should be remembered that although the Day Schools Subcommittee had adopted these recommendations upon the report of the Special Subcommittee of 1907 to which we have referred, it transpired subsequently that they represented the opinion of only the minority of that Special Subcommittee, and that its majority report had been strongly in favour of establishing school clinics on the dual grounds of efficiency and economy. On May 1st last the arguments and views expressed in this majority report were circulated amongst the members of the London County Council, and they have been since placed on sale in an official publication. We summarised and discussed these views in our issue for May 8th.

At the meeting of the London County Council on March 30th, when the Day Schools Subcommittee's recommendations came up for discussion, the views of the majority of the Special Subcommittee of 1907 were not, officially at any rate, before the Council, and, as we reported, Mr. Jackson moved the adoption of the second of these recommendations but was defeated by an amendment of Mr. Hayes Fisher, who moved—

> That notwithstanding the declaration of the Prime Minister on March 18th that the Council cannot expect to receive any increased grants from Imperial funds towards the cost of medical treatment of children in the London schools, this Council, being of opinion that certain of the diseases referred to in the foregoing reports are of such a nature as to justify their medical treatment by the education authorities, refers the recommendation back to the committee to report as to the estimated cost of the treatment of each of these diseases, as to the degree to which they affect the educational efficiency of the schools, as to the steps which should be taken to give effect to this resolution, and also as to the steps to be taken to secure such an amendment of the Education (Administrative Provisions) Act, 1907, as will enable local educational authorities to recover the costs of such treatment from parents who are in a position to pay for it.

This amendment having been carried as a substantive motion, the recommendation was referred back to the Day Schools Subcommittee, which reported on May 19th that it was prosecuting inquiries in respect of eye, ear, and skin ailments, but had postponed for six months the question of the consideration of teeth. The publicity which was given to the proceedings of the Council gave rise to a considerable amount of discussion amongst the medical staffs of the metropolitan hospitals as to the advice which they should offer to the managing boards of their respective institutions with regard to accepting the responsibility of treating large numbers of the London County Council's school children, and we were able to place before our readers a representative body of medical opinion upon an admittedly difficult subject. At the same time we gave our own views on this important matter in a leading article,[2] whilst fully recognising the latitude of opinion which must necessarily prevail in a situation where the interests of the school children, the hospitals, the private medical practitioners of the Council's school area, and of the ratepayers are all concerned, and to some extent are at cross purposes.

From what we have said it will appear that the Council has been engaged for the past two years in deliberations of a somewhat complex character, but we trust that we have made clear the position in which the labours of its Education Committee, that body's Day Schools Subcommittee, and the Special Subcommittee of 1907, with its majority and minority reports (the second of which has alone been officially debated by the Council), have at present resulted, that is, in the reference back to the Day Schools Subcommittee of recommendation (*b*) printed above in the light of the instructions contained in the Council's resolution of March 30th. The latest result of this reference has been the preliminary report which this subcommittee presented to the Education Committee of the Council at the meeting of July 14th in view of the approaching long vacation of the Council and of the urgent need of treatment for children suffering from diseases of the eye, ear, and skin, although the inquiries with regard to their treatment have not yet been completed. The report first rehearses nine points suggested to the Education Committee in a memorandum from the Finance Committee as necessary to be considered in connexion with any scheme which the Education Committee may recommend, and proceeds as follows:—

> The inquiry which has been so far conducted has been directed towards ascertaining (1) the number of children affected; and (2) what

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[1] THE LANCET, July 17th, p. 168.

[2] THE LANCET, May 15th, p. 1393.

the hospitals would be prepared to do in the way of treatment. With [illegible]

ringworm, 3014; total, 43,746.

With regard to the hospitals, we caused a letter to be sent to 56 hospitals which deal with eye, ear, and skin ailments, explaining the [illegible]

[illegible] These may be divided [illegible] desire to coöperate with [illegible] athy and are anxious to [illegible] present accommodation, [illegible] ory may be placed four [illegible]

[illegible] t a grant of [illegible] nent to the [illegible] ction by the [illegible]

[illegible] to coöperate [illegible] specifically stated that they can take more cases per week. In this category there may be placed at present six hospitals. There is reason to believe that as time goes on the number of hospitals in this category [illegible]

[illegible]

It has been intimated by certain hospitals that if they undertake [illegible]

We recommend—

(a) That the offers of the authorities of the undermentioned hospitals to provide medical treatment, free of charge, for school [illegible] almic [illegible] apel- [illegible] reen, [illegible] Royal [illegible] rand, [illegible] and [illegible] d to [illegible] solution (a).

(c) That arrangements be made to secure medical treatment of [illegible] ordinary means, for a payment not exceeding £50 a year for each additional medical assistant (working one half day a week) required to be engaged for the treatment of such children, together with a sum of 2s. for each child so treated to cover the other expenses incurred by the hospitals; and with, if necessary, (ii.) the authorities of other hospitals who may be prepared to undertake such treatment on similar terms; and that the Education Committee do submit a report upon the results of such negotiations in due course; and that the Council be recommended accordingly.

A statement is appended to the report analysing the replies received from the various hospitals in tabular form, of which the following is a brief summary:—

[illegible]

[illegible] ous to coöperate so [illegible] unable to accept [illegible] London Hospital [illegible] Hospital, Italian [illegible] perance Hospital, [illegible] and St. Thomas's Hospital.

3. Hospitals willing to coöperate and to take additional cases: Central London Ophthalmic Hospital, Hospital for Sick Children (Great [illegible] Queen's [illegible] hthalmic [illegible]

[illegible] oöperate [illegible] present, [illegible] Charlton Cottage [illegible] (Dalston-lane), [illegible] Diseases of the [illegible] Throat (Golden- [illegible] spital for Acci- [illegible] Hospital (Soho), [illegible] es of the Skin [illegible] ases (Holborn), [illegible] London Hospital [illegible] al (Marylebone-road).

The table summarises the information received from the above-mentioned hospitals under the following heads: 1. Number of cases at present taken of children of school age. (The replies furnished on this point were meagre.) 2. Number of additional cases which could be taken. 3. Details as to payment required. 4. Other details embodied in the replies.

There was a considerable diversity in the answers received under these headings. Perhaps the most enterprising was from St. John's Hospital for Skin Diseases, which offered to treat the estimated 3000 ringworm cases in the Council's schools in the course of one year for £1000, undertaking the full responsibility of bringing each case to a conclusion, an offer which has not commended itself to the Education Committee. As an example of the number of additional cases which can be taken, Charing Cross Hospital will undertake 1000 refraction cases, 300 to 350 skin cases, and 1000 throat and ear cases a year; whilst the London Hospital is willing to treat 15 aural and 15 ophthalmic cases on four days a week and 20 skin cases on two days a week. The Great Northern Hospital estimates that it can deal with about 3700 new cases a year, allowing for four hours' work per week of one ophthalmic and one aural assistant, and for treating 200 ringworm cases. The Central London Ophthalmic Hospital can take 120 extra cases a week. The Queen's Hospital for Children, Hackney-road, will take 400 refraction cases, 2500 discharging ear cases, and 900 ringworm cases annually; and the Royal Westminster Ophthalmic Hospital will take 60 new cases a week, to 25 of the Victoria Hospital for Children, Chelsea. It will be noticed that the last named of these hospitals are those whose offers of treatment the Education Committee are prepared to accept, as stated in their first recommendation to the Council. We note that St. George's Hospital, in its reply, expressed its anxiety not to interfere with the work of the general practitioner, and we cannot doubt that the committees of other hospitals took this important point into consideration before framing their replies

The recommendations (a) (b) (c) (d) embodied in this report were adopted by the Education Committee on July 14th, after a discussion in which Mr. A. J. Shepheard, Dr. Beaton, and Mr. W. Sanders declared themselves in of 1906 with excellent results in syphilis, in daily amounts of 18 grammes, representing 6 grammes, or about 90 grains of metallic mercury. The daily amount should be regulated, according to the susceptibility of the patient, 10, 15, or 20 grammes being rubbed in daily on 30 successive days. The frictions should last about ten minutes, care being taken to rub slowly. Dr. Dupuy prefers to apply the friction at the bend of the limbs or on the inner surfaces of the thighs. It is preferable to abstain from washing the parts for several hours after each friction in order to facilitate the absorption of the mercury. The ease of absorption is shown by the fact that mercury has been found in the urine after applying the friction for five minutes and then washing the skin with soap and water. Although the results obtained with this preparation in syphilis were generally most encouraging, it did not materially relieve the dry, papular eruptions of this disease. Apart from syphilis, the oleo-brassidate of mercury has been used with excellent results in parasitic affections of the skin, including pityriasis, which readily yields after two applications, followed by washing with soap and water.

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[1] THE LANCET, July 17th, p. 168.

Mr. SHEPH[illegible]
any desire to wrec[illegible]
The Rev. STEWART H[illegible]
suggested that the children
of unqualified men, but a g[illegible]
employed on this kind of w[illegible]
exercise supervision.
The amendment was lost on
30, and the recommendations of
adopted without alteration.

IT is officially notified that the exhibit of
Messrs. Burroughs, Wellcome, and Co. at the Bombay
Medical Congress, held in February last, has received the
highest award.

members of the
societies, might be
committee would b[illegible]
of Great Britain
vogue and to ascer[illegible]
ference of the

work was performed by, or on behalf of, medical men. Secondly, it was desirable that the committee should collect inform [illegible] practice of treating ailmer [illegible] pharmacists and by other [illegible] for these important duties.

Another interesting discussion was that opened by Mr. H. **WIPPELL GADD**, F.C.S., barrister-at-law, on Some Problems of the Poison Schedule.

Among the many interesting papers read we may refer to the following. Dr. W. **MARTIN** read a paper upon Some Experiences in the Testing of Drugs by Bio-chemical Methods, with Special Reference to Digitalis, Squill, and Strophanthus. Dr. Martin went minutely into a subject which was rather outside the pharmaceutical track and in conclusion referred to the idea, which seemed to be gaining ground, that some tests of a bio-chemical nature should be included in the Pharmacopœia. He understood that it would be a departure from the principles that had hitherto actuated the compilers of the British Pharmacopœia to include methods that could not be carried out by the pharmacist himself, and his own impression was that the time was not yet ripe for the introduction of tests of this kind, unless they were made permissive and not mandatory. If it were decided that the "frog test" was the most satisfactory method of estimating the therapeutic activity of certain drugs he thought it might be included, as the tests were of such a kind that they could be carried out quite well and with perfect propriety by men who were trained in the art of delicate manipulation and scientific observation.

The increase in the duty on alcohol probably suggested the subject of the paper read by Mr. W. B. **DOTT**, F.R.S.E., namely, "The Use of Alcohol in Pharmacy." Mr. Dott remarked that there had been manifest of late a distinct *tendency to reduce the proportion of spirituous preparations*. Comparing the 1885 with the 1898 Pharmacopœia he found the tinctures reduced from 72 to 65 and the liquid extracts increased from 12 to 17. The question arose: Could the proportion of alcohol used in pharmaceutical preparations be s[illegible] the medicinal value c[illegible] ould, and mentioned [illegible] with lower strength alcohol than that required by the Pharmacopœia The strength of alcohol used in making many extracts could also be reduced without disadvantage. He also discussed the value of glycerine and acetic acid as solvents.

The results of the analysis of a number of samples of "malt extract with cod-liver oil" were given by Mr. E. F. **HARRISON**, B.Sc., F.I.C. 19 samples were examined and the percentage of oil was found to vary from 1·5 to 30·5; the diastatic value of the extract varied from 7 to 776, [illegible] act from 53·6 to [illegible] reed that the very [illegible] things which was [illegible] ew of the public. [illegible] number of samples of "commercial emulsions" drawn from many sources. Some were dispensed at various pharmacies in London and the country, while others were purchased at random, but the majority of the samples were obtained direct from wholesale houses The emulsions varied roughly from 25 per cent. to 50 per cent. and were generally as described on the label; the manufacturers of those containing the lower amounts deemed any information unnecessary. He considered that in a complex mixture like an emulsion 10 per cent on the result would not be too liberal an allowance in judging accuracy.

Probably *no ointment introduced into the more recent* of the British Pharmacopœias has given so much trouble and dissatisfaction as the paraffin ointment at present official. Mr. J. H. **FRANKLIN** had conducted a number of experiments with a view to discover an ointment base to replace it and embodied the results in his paper on "Unguentum Paraffini." He suggested the following alternative formulæ:—

A.

White petroleum jelly	85 parts.
Pure bleached cerasin	15 "

B.

White petroleum jelly	82 parts.
Paraffin wax m p. 130° F.	8 "
Pure bleached cerasin	10 "

"B" is the whiter basis, but "A" is rather smoother.

Mr. C. **SYMES**, Ph.D., suggested an improvement on the pharmacopœial method for the manufacture of "fluid extract of cascara sagrada." The point of exhaustion of the bark is usually determined by the absence of bitterness in the percolate, but in working a small batch of 28 pounds of bark a short time ago it occurred to Dr. Symes that when bitterness of the percolate had ceased the addition of ammonia to a further portion of the menstruum might be the means of obtaining a further yield of extract possessing medicinal value. He found that the apparently exhausted bark did yield a percolate possessing distinct aperient properties when treated with diluted ammonia, and he described in detail the process employed.

Mr. W. A. H. **NAYLOR**, F.I.C., and Mr. E. J. **CHAPPEL** gave details of a process for the "estimation of extractive and glycerine in spirituous galenicals." The process depended on the removal of the glycerine and determination of the extractive by weighing the residue.—Mr. G. **PINCHBECK**, F.C.S., contributed a note on the "Separation of Strychnine from Brucine." The experiments described demonstrate that the United States Pharmacopœia assay process, modified in a manner proposed by the author, was capable of giving accurate results under conditions which were not onerous to the worker.—Mr. J. G. **REMINGTON** and Mr. H. **LANCASTER** communicated a paper on the "Comparative Examination of the Halogen Absorption of Oils by the Methods of Hubl, Wijs, Hanus, and McIlhenoy"; and Mr. D. **LLOYD HOWARD** and Mr. J. B. P. **HARRISON** described a method for the "Determination of Antimony in its Sulphide Preparations."

THE
TWELFTH INTERNATIONAL CONGRESS ON ALCOHOLISM.

(*Continued from p 251.*)

ON Thursday, July 22nd, the Congress met in the *Kensington Town-hall*, when Sir **THOMAS P. WHITTAKER**, M.P., read a paper on the Economic Effects of the Production and Consumption of Alcohol. The production of any article which gave employment to a large number of people, he said, was not necessarily a proof that such production was wise or valuable. If money was not spent in the production of liquor it would be available for other things which would give at least as much employment as the liquor trade now gave. The total expenditure on alcohol in this country was £165,000,000, and the value of that expenditure must be gauged from the point of view of the consumer. The real tests of the wisdom and value of this expenditure were two and were exemplified in these questions: (1) were these liquors beneficial? (2) could the consumer afford the expenditure? He went on to contrast the health and work of the teetotaler with that of the non-abstainer and, founding his arguments principally on insurance statistics, drew the conclusion that the abstainer did better work and was more healthy. Drink, he said, was the dominant factor in crime, pauperism, and disease.

Herr **KARL KOGLER** (Vienna), in a paper on Alcoholism and Industrial Assurance against Disaster and Invalidity, maintained that alcohol leads to degeneration of the race and consequently to an increase of risks in every class of workman's insurance.

In the evening, by the invitation of the Hon. and Very Rev. J. W. Leigh, Dean of Hereford, a garden party was held at the Grosvenor River Club, Henley-on-Thames.

On Friday, July 23rd, the Congress again met in the Kensington Town-hall, when Alderman F. S. **SPENCE** read a paper on "No License" Legislation, and Herr **VILTOR** read a paper on International Concert in Protecting Native Races from Alcoholism. After some discussion on these papers it was decided to send the following telegram to Mr. Chamberlain:—

[illegible]

The afternoon session was held at the Imperial Institute, when Professor LARS O. JENSEN (Bergen) dealt with the subject of Systems for the Control or Management for the Liquor Traffic. This paper had special reference to the Norwegian system of intrusting the sale of liquor to *samlags* or companies, and in the course of his remarks he said that the greatest decrease of drunkenness in Norway had taken place before the introduction of *samlags*, but, on the other hand, the *samlag* system prevented in a large measure the worst forms of drunkenness.

The Scientific Section met in the evening at the Imperial Institute, Dr. T. S. CLOUSTON (Edinburgh) dealing with the subject of the Resistive Power of the Brain against Alcohol, and Dr. F. W. MOTT (London) with the Effects of Alcohol upon the Nervous System.

The work of the Congress was concluded on Saturday, July 24th, with a final general meeting at the Imperial Institute. The papers read included Alcoholism and Crime, by Lieutenant-Colonel A. B. McHardy (Edinburgh); The Treatment of the Criminal Inebriate, by Professor G. Aschaffenburg (Cologne); and Legislation for the Inebriate, by Dr. R. W. Branthwaite (London).

Lieutenant-Colonel McHARDY brought forward statistics showing that in 1907 58,000 cases of simple drunkenness were reported to the police in Scotland, besides 32,000 cases of breach of the peace, for the most part brought about by excessive drinking. From the records of 153 cases ending in sentences for murder and culpable homicide it was shown that in 84 per cent. of these cases drink either generally or immediately was associated with the crimes.

Professor ASCHAFFENBURG maintained that legal penalties for the treatment of the criminal inebriate were usually insufficient. The drinker was suffering from a disease, and if he showed himself to be incurable he should be sentenced to perpetual custody in an asylum.

Dr. R. W. BRANTHWAITE spoke of the inelasticity of the law, but believed that there was reason to hope that the near future would show extensive changes in our system of dealing with the victims of drink.

It having been definitely decided that the next Congress should be held in 1911 at the Hague the proceedings were brought to a conclusion with the usual complimentary votes of thanks.

EPSOM COLLEGE.

FOUNDER'S DAY was commemorated at Epsom College on Saturday last, when, in spite of the frequent showers, there was a large attendance of relatives of the boys and of supporters of the College. There were also present several old Epsomians who were in the school during the head-mastership of the late Dr. Robinson Thornton, which lasted from the foundation of the College in 1855 to the year 1870, and Dr. Thornton's widow, daughter, and two sons. The proceedings began with a service in the chapel, at the close of which the Rev. Canon Curtis, an old boy, delivered a brief address and unveiled a window which has been erected in memory of Dr. Thornton by old Epsomians of his time and other friends of the College who appreciated his work at Epsom. The window, the cost of which was defrayed by subscriptions from old pupils, is placed on the south side of the chancel, and is designed to illustrate the events of Easter Day, that being the day on which the Archdeacon died. The three scenes are Christ's appearance to Mary Magdalene in the garden: "Touch Me not"; the Supper at Emmaus: "He was known to others in breaking of bread"; and Christ's appearance to St. Peter: "The Lord is risen indeed and hath appeared to Simon." The upper tier of lights contain single figures of Apostles and teachers suggesting different ideas of ministerial work: St. James, St. Peter, and St. Timothy, the proposal being to continue a series of figures in the other chancel windows. In the tracery lights are the arms of the University of Oxford and of St. John's College, Oxford, to which the late Archdeacon Thornton belonged. Mr. Percival Turner, with whom the scheme for the memorial window originated, has stated that his requests for subscriptions to the window fund, which were commenced shortly after Archdeacon Thornton's death at Easter, 1906, met with invariably prompt response.

The visitors afterwards assembled in the big schoolroom to hear the customary report by the Head-master, the Rev. T. N. H. Smith Pearse, on the work of the school for the year, and to witness the distribution of prizes by Sir Walter Foster. There were on the platform the Earl of Rosebery (President of the College), who personally presented his own prizes for modern history and English literature, Sir Henry Morris, Bart. (treasurer), Sir William S. Church, Bart. (chairman of the council); Sir Constantine Holman, the Rev. Canon Curtis, Dr. W. Collier, Dr. F. de Havilland Hall, Dr. F. Needham, the Rev. E. W. Northey, Mr. Clement L. Smiles, Mr. W. A. Propert, Dr. Guthrie Rankin, and Dr. F. Taylor.

In reviewing the work of the year the HEAD-MASTER drew attention to the fact that though the scientific successes of the College were well known, and special facilities existed for the preparation of students for the medical profession, it had always been his policy to broaden the education as much as possible, so that boys should enter various professions. He felt sure, therefore, that all present would be glad to hear that honours had been won by old Epsomians during the past year in the classical tripos, in the history tripos at Cambridge, and in the school of theology at Oxford. He referred to two special distinctions obtained by old Epsomians—namely, the baronetcy conferred upon Sir Henry Morris, late President of the Royal College of Surgeons of England, and the appointment of the Rev. R. H. Whitcombe as Bishop of Colchester. He said that, according to some newspapers, public schools nowadays must be judged by the size of their rifle corps, and Epsom College could stand being judged by this standard, since 133 boys, being 80 per cent of those eligible to join, were members. He deprecated the teaching of the elements of science to very young boys at the expense of such necessary subjects as Latin, English, and French. As evidence of what a school can do in science if boys are properly prepared in other subjects, he pointed out that during the past eight years no fewer than 46 Epsom boys have passed the preliminary scientific examination for the degree of M.B., B.S. of the University of London, and 33 have passed a part, only 16 candidates having failed.

After the distribution of the prizes Sir WALTER FOSTER delivered an address to the boys. He first congratulated Sir Henry Morris upon his baronetcy which had been well won by hard work. He then expressed his pleasure at coming to Epsom College, because he knew John Propert, its founder. As long as the medical profession flourished the name of Propert would be honoured, and Epsom College would have its share in the making of great Englishmen. He was struck by the beauty of the surroundings of the College and the opportunity that was given for healthy and invigorating games, while judging from the appliances for teaching and the character of the staff the College also gave the boys the opportunity of acquiring a healthy mind. Every head-master he had known always held before his pupils some ideal. When he was a boy the great ideal held out before him was duty. The lives of Nelson and Wellington had a wonderful influence in fixing the guiding principle of life, and no better teaching could be given to young people than that of devotion to duty. But duty done well required something more than mere mechanical adherence to rule. It should be done with foresight and knowledge, and the President of Epsom College, when he preached the doctrine of efficiency, extended and developed the old doctrine of duty. It was not given to everyone to be efficient, but it was given to them all to make the effort. Everyone should start with the idea that one of their principles of life must be the performance of duty, and should feel that in the performance of duty well and wisely done they contributed in the most effective way to the good of their country. In conclusion, he expressed his pleasure at finding that science took a leading part in the curriculum, and said that he was also delighted to know that the Head-master considered classical teaching to be the best way of building up vigorous mental power. In that College, therefore, the older learning would not be neglected, while the younger learning was welcomed and extended. Epsom College was helping to do a great work, and would, as it deserved, take a high place among the public schools of England.

At the conclusion of the address Sir HENRY MORRIS proposed a cordial vote of thanks to Sir Walter Foster for his kindness in visiting the College to address the boys. This was carried by acclamation, and Sir WALTER FOSTER briefly responded.

Amongst the honours gained direct from the school since last Founder's Day are an open science scholarship at Christ Church, Oxford, an open classical exhibition at Keble College, Oxford, and a pass into Woolwich (forty-second place). 19 boys have passed the matriculation examination of the University of London, and 19 have passed in the first class of the art examination held by the Society of Art Masters.

After leaving the schoolroom the visitors inspected the various new buildings, including the "Markham Skerritt" laboratories, erected through the kindness of the late Mrs. Markham Skerritt, which cost over £5000; the new lavatory block and the carpenter's workshop, all of which have been completed; also the new music block and gymnasium which are in process of erection.

METROPOLITAN HOSPITAL SUNDAY FUND.

AT a meeting of the Council of the Fund held at the Mansion House on July 28th it was announced that £67,212 were available for distribution. We hope to publish a list of awards in an early issue of THE LANCET.

The following are among the amounts which have been received at the Mansion House since our last issue:—

	£	s.	d.
[illegible]	439	0	0
[illegible] Vicarage-gate, [illegible]	315	0	0
[illegible]	261	0	0
[illegible]	240	0	0
[illegible]	165	0	0
[illegible]	143	0	0
[illegible]	135	0	0
[illegible]	126	0	0
[illegible]	123	0	0
[illegible]	109	0	0
[illegible]	103	0	0
[illegible]	97	0	0
[illegible]	95	0	0
[illegible]	94	0	0
[illegible]	82	0	0
[illegible]	72	0	0
[illegible]	67	0	0
[illegible]	60	0	0
[illegible] Missions	54	0	0
[illegible]	54	0	0
[illegible]	54	0	0
[illegible]	53	0	0
[illegible]	52	0	0
[illegible]	50	0	0
Dr. Ludwig Mond	50	0	0
St. Mark's, Marylebone-road	49	0	0
St. Simon's, Upper Chelsea	43	0	0
St. James's, Holloway	41	0	0
St. Luke's, Westbourne Park	39	0	0
St. John's, Walham Green	37	0	0
St. Peter's, Streatham	35	0	0
St. George's Presbyterian Church, Brondesbury, and Mission	32	0	0
[illegible]	31	0	0
[illegible]	30	0	0
[illegible]	30	0	0
[illegible]	30	0	0
[illegible]	29	0	0
[illegible]	29	0	0
[illegible]	28	0	0
[illegible]	28	0	0
[illegible]	28	0	0
[illegible]	26	0	0
[illegible]	23	0	0
[illegible]	23	0	0
[illegible]	21	0	0

ASYLUM REPORTS.

Monmouthshire Asylum, Abergavenny.—The total number of patients under treatment during the year ending March 31st was 1123 and the average number resident was 932. There were 98 patients discharged and of these 63 were recovered, the recovery rate for the year being 32·4 per cent. This rate is 6·4 per cent. lower than that obtained in 1907, and 4·4 per cent. lower than the average obtained in this asylum. The deaths during the year numbered 88 and the death-rate calculated on the average number resident was 9·4 per cent. At this asylum there is a great disproportion between the numbers of male and female patients. There are now 134 more male patients than female patients, and the male admissions during the year were nearly double the female admissions. This appears in part to be due to the increased industrial development in the mineral portion of the county. The statistical tables are presented in the new form and have entailed a large additional amount of labour, which it is hoped will enhance their value.

Leicester Asylum, West Humberstone.—The total number under treatment in this asylum for the year ending March 31st was 962, the average number resident being 732. The admissions during the year were 177. In the discharges, of which there were 254, the percentage of recoveries on the admissions was 48·2. The rate of mortality upon the average number resident was 7·1. At this asylum there were 142 epileptic patients under treatment and 11,554 fits were recorded.

County and City of Worcester Asylum, Powick.—The total number under treatment at this asylum for 1908 was 1107, the average number resident being 979. Discharges amounted to 84 patients, and of these 50 were discharged recovered. This gives the high percentage of 71·4 of recoveries, but this is explained by the small number of the admissions on which the percentage was calculated. The deaths numbered 69, being at the rate of 7·04 on the average number resident.

Down District Asylum, Downpatrick.—The total number of cases under treatment at this asylum for the year ending March 31st was 868, the daily average number resident being 739. The admissions numbered 143 and the discharges showed a recovery-rate of 49 per cent. The deaths numbered 40, giving a percentage of 6·8 on the daily average number resident. For the first year in the knowledge of Mr. M. J. Nolan, resident medical superintendent, there has been no case of dysentery, which in former years was a scourge in this asylum. It is hoped that in consequence of the various hygienic measures adopted by the committee the disease will not again assert itself. The report is illustrated with views of the exceedingly pleasant looking accommodation provided for the patients.

Lebanon Hospital for the Insane, Asfuriyeh, near Beyrout, Syria.—The report of this hospital was presented at the annual summer meeting for 1909. The work of the hospital represents the only attempt that has been made in Syria to provide for the mentally affected. The native methods of treatment of the insane appear to be both inadequate and cruel, and there can be no doubt that the work done at the hospital is worthy of all commendation. In the year reported on 122 patients were admitted to the hospital, making a total of 197 patients treated during the year. The discharges numbered 115 and of these 26 were recovered and 26 improved. To account for the large number of discharges it appears that the relations of patients insist on their removal long before they are really well. Those who would wish to learn more of the work of this medical mission can obtain copies of the report from the Secretary, at 35, Queen Victoria-street, London, E.C.

MEDICINE AND THE LAW.

The Liability of Hospitals to their Patients.

THE Court of Appeal recently delivered judgment upon a question of law of considerable importance to hospitals. In the action out of which the appeal arose the plaintiff, Mr. W. H. Hillyer, a medical man, sued the Corporation of the City of London, in their capacity of governors of St. Bartholomew's Hospital, for damages for injuries alleged to have been received by him through the negligence of themselves or their servants. He had been operated upon in the hospital and it was for injuries alleged by him to have been caused to him by the negligence of those concerned in the operation that he sought to recover damages. The decision of the court was delivered by Lord Justice Farwell, who, with regard to the main point of whether the surgeons, anæsthetists, and nurses present at and taking part in an operation are "servants" of the governors of a hospital, pointed out that the surgeons and anæsthetists are not under the direction of the governors or bound to obey their orders, and therefore cannot be regarded as being their servants for whose acts they would be liable. The governors were only subject to the obligation to use care and skill in selecting proper persons as members of the hospital staff. With regard to nurses, although primarily the servants of the governors, they took their orders from and were under the control of the surgeons during an operation, and thus in respect of duties so performed ceased to be the servants of the governors. His lordship, with regard to the case before the court, said that the appellant had not proved negligence on the part of those engaged in the operation, and that in order to obtain damages he had to prove such negligence on the part of persons for whom the respondents were answerable. At the trial[1] Mr. Justice Grantham had withdrawn the case from the jury on the ground that if there was negligence the defendants were not liable and that there was no evidence of negligence. The judgment delivered was concurred in by the Master of the Rolls and Lord Justice Kennedy and the appeal was dismissed.

Prosecutions for the Sale of Indecent Publications.

Two recent prosecutions resulting in the conviction of the offenders show that the question of the publication of demoralising and indecent jests, pictures, and advertisements is not being allowed to be forgotten, although the Government has not yet found time to legislate upon the lines suggested by the Joint Select Committee which reported in the summer of 1908. In both instances a periodical called *Photo Fun* was concerned, and in the first a defendant named Hemyng, described as its "responsible editor," was fined 40*s.* with 3 guineas costs. It will be remembered that the need of new provisions simplifying the procedure in these cases was dwelt upon by legal witnesses before the Select Committee. In this instance the editor was prosecuted not as such but for sending through the post a packet containing the matter complained of, a copy of his paper which, presumably, the police had ordered from him. We have before us a copy of *Photo Fun*, and its contents may fairly be said to justify the proceedings taken, although we do not know that our copy is of the incriminated issue. Its pictures and printed matter come within the definition suggested by a witness before the Joint Select Committee, as "directly suggesting immorality or promiscuous sexual intercourse, offensive to modesty or delicacy, lewd, unchaste or dissolute." Its advertisements are almost entirely of an objectionable character, the goods offered including preventives of conception, quack medicines and "remedies" for "ladies," for "weak men," and for those suffering from venereal disease, together with books or photographs either indecent or so described as to suggest that they are such. The second prosecution referred to was directed against a man named Burns, a newsagent in High Holborn, and was at the instance of the National Vigilance Association. The original search warrant was issued in connexion with a publication entitled *Photo Bits*, but copies of others, including *Photo Fun*, *Life*, and various French periodicals, were also laid before the court, and the possibility of proceedings against persons more directly responsible for their production than the newsagent was mentioned. On the summons issued the defendant was fined £10, with £3 3*s.* costs, and if this serves as a warning to others carrying on the same kind of business it should have a useful effect. None should have any sympathy with a corrupting and demoralising trade dangerous to the moral and physical health of the public. The report of the Joint Select Committee referred to, which was commented on in a leading article in THE LANCET[2] at the time of its issue, recommended that wider power to deal summarily with the publication of indecent matter should be given to magistrates, and that the determination of what is objectionable and indecent should be left to their discretion without any definition that would limit their powers to dealing only with what is grossly obscene. It also recommended that the advertisement and sale of drugs or articles which might reasonably be considered as designed for promoting miscarriage or for procuring abortion should be made illegal, and that it should be made illegal to advertise drugs or articles designed for the prevention of conception.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Liverpool.—The fact that the population of Liverpool, the second largest city in the kingdom, is only a little over 750,000 brings home to us the relative smallness of our own population as compared with the United States of America, where there are several cities reaching or nearly approximating a population of 1,000,000. But perhaps the time is [illegible] e of the large cities, such as Glasgow, [illegible], and Birmingham, will endeavour once again to extend their areas and thus bring about, by what may be termed compulsory artificial means, what they are by only a very long process able to accomplish by natural increase. Probably all the four cities mentioned could easily, if they could obtain power to extend, bring their populations up to 1,000,000, and thus for the moment exceed the population of Glasgow. The birth-rate of Liverpool for 1908 was 31·7 per 1000, the rates ranging from 18·2 to 39 2 per 1000 in the different districts Although the Liverpool birth-rate is, like that of the country as a whole, steadily decreasing, it is only exceeded by three of the towns having a population of over 100,000. The general death-rate of the city for 1908 was 18·2 per 1000, and it is of interest in relation to the general social circumstances of Liverpool to notice that the percentage of deaths which occur in public institutions is materially greater than in other towns, the proportion being for 1904–08 32·6 in Liverpool, as against 24·8 in Manchester, 28·4 in Birmingham, and 15·8 in Leeds. Dr. E. W. Hope points out that a high percentage of total deaths in institutions generally implies poverty and want, but that there is another explanation, and that is the popularity of the institutions. This is quite true, and it is not inconceivable that the condition of public institutions might be made so attractive that half the population or even more might elect to die within their walls. In 1884 the death-rate of Liverpool was over 26 per 1000, whereas now it is well under 19 per 1000. The infant mortality rate in 1908 was 140 per 1000 births, and in connexion therewith Dr. Hope very truly observes that "it must never be forgotten that, as regards feeding and care, whatever the municipality is able to do in regard to the preservation of infant life is insignificant when compared with what it is in the power of the mother to do If the mother will suckle the infant its risks are slight. If she will not do so the corporation proves but a poor foster-mother owing to the absolute impossibility of fulfilling the duties which only the mother herself can discharge" In several of Dr. Hope's reports emphasis has been laid upon the importance of the personal factor of the mother in the prevention of excessive infantile mortality; and in the report before us reference is made to the fact that, in 874 families concerning which inquiries were made by virtue of the death of an infant in such family, it was found that in these families there had been born 3801 infants, of whom, practically all in infancy, no less than 1895 had perished—an infantile mortality rate of 498 per 1000 births. Dr. Hope also refers to the influence which is exerted upon infantile mortality by the rapidity with which children follow one another, and where the next arrival may divert detailed attention from its predecessor almost before the first is weaned; and in connexion with this question of very high birth-rates reference is made to the returns of certain corporation dwellings built to accommodate persons displaced by the destruction of the slum areas in which they lived. The birth-rate in these dwellings, which are situated in an area where the birth-rate is 40 per 1000, was no less than 55 per 1000 during the last two years. There were 21 cases and 10 deaths from typhus fever in 1908, figures which rather suggest that some of the cases went undetected. Since the year 1902 there has been, as in many other large towns, a marked decline in the death-rate from enteric fever, and the same observation holds good with reference to the death-rate from pulmonary tuberculosis, as to which subject Dr. Hope makes some very statesmanlike comments. Referring to phthisis mortality in the corporation dwellings, he remarks that notwithstanding the history of the occupiers the mortality during 1907–08 was only 1·35 per 1000, a rate certainly lower than that of the city as a whole and very considerably below that of the districts in which the dwellings are situated. Holding the view that this low phthisis death-rate is the result of the good sanitary conditions provided by the corporation Dr. Hope adds: "No practical sanitarian would suggest that if instead of spending the money in demolishing the slums, purchasing the sites, and erecting the dwellings it had been spent in providing sanatoriums and in removing and maintaining the diseased people therein that the results would have been at all comparable either in benefit to the city or to the inmates of the dwellings themselves," and when we turn to the maps and illustrations of the corporation dwellings contained in the Liverpool report we cannot but express our agreement in the views set forth by the medical officer of health. The work of medical inspection of school children has now been established upon a satisfactory basis in Liverpool. It was at first proposed to establish a separate medical department to act under the Director of Education, but it was eventually determined that the medical officer of health should supervise the work.

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[1] THE LANCET, April 10th, 1909, p. 1073.

[2] THE LANCET, Oct. 31st, 1908, p. 1307.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8056 births and 3335 deaths were registered during the week ending July 24th The annual rate of mortality in these towns, which had declined in the six preceding weeks from 12·6 to 11·5 per 1000, further declined to the exceptionally low rate of 10·6 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these towns averaged only 11·3 per 1000, and in London during the same period it did not exceed 10·9. The lowest recorded annual death-rates last week in the 76 towns were 3·6 in Willesden, 4·4 in Smethwick, 4·8 in York, and 4 9 in Hornsey; the rates in the other towns ranged upwards, however, to 15·6 in Great Yarmouth, 16·3 in West Bromwich, 16 4 in Swansea, and 16·6 in Newport (Mon) In London the recorded death-rate last week did not exceed 10·0 per 1000, and was considerably lower than in any previous week of this year. The 3335 deaths from all causes in the 76 towns last week showed a further decrease of 302 from the declining numbers in recent weeks, and included 311 which were referred to the principal epidemic diseases, against 341 and 324 in the two preceding weeks; of these 311 deaths, 95 resulted from measles, 88 from diarrhœa, 51 from whooping-cough, 34 from diphtheria, 32 from scarlet fever, and 11 from "fever" (principally enteric), but not one from small-pox. The 311 deaths from these epidemic diseases last week were equal to an annual rate of 1·0 per 1000, corresponding with the rate in the previous week. No death from any of these epidemic diseases was registered last week in Bradford, Willesden, Brighton, Wallasey, Northampton, or in 14 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·7 in West Bromwich, 3·8 in Bootle, 4·2 in Walsall, and 6·7 in Newport (Mon.). The 95 fatal cases of measles in the 76 towns showed a further considerable decline from the numbers returned in recent weeks; the highest annual death-rates from this disease last week were 2·3 in Bootle, 2·5 in Wolverhampton, 2·6 in Walsall, and 6·0 in Newport (Mon.). The deaths attributed to diarrhœa, which had steadily increased from 58 to 67 in the four preceding weeks, further rose to 88 last week, but were considerably below the average for the season. The 51 fatal cases of whooping-cough showed a further decline from the numbers in recent weeks, but caused annual rates equal to 1·1 in Walthamstow and in St. Helens, and to 1·3 in Southampton and in South Shields. The 34 deaths from diphtheria were within one of the numbers in the previous week, and included three in Manchester and Salford, and two both in Rochdale and in Newcastle-on-Tyne. Of the 32 fatal cases of scarlet fever ten occurred in London and its suburban districts, four in Liverpool, and three in Manchester and Salford. The deaths referred to "fever," which had been nine and 22 in the two preceding weeks, declined again last week to 11. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had steadily increased in the seven preceding weeks from 2228 to 2737, fell to 2731 on Saturday last; 367 new cases of this disease were admitted to these hospitals during last week, against 371 and 415 in the two preceding weeks. The registered deaths in London last week referred to pneumonia and other diseases of the respiratory organs, which had been 154 and 108 in the two previous weeks, rose again last week to 132, and exceeded by nine the corrected average number in the corresponding week of the five years 1904-08. The five deaths directly referred last week to i [illegible] previous week [illegible] of the deaths [illegible] certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered during last week were again duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Leicester, Salford, and in 54 smaller towns; the 22 uncertified causes of death last week in the 76 towns included five in Liverpool, three in London, and two each in Birmingham, Bootle, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 903 births and 448 deaths were registered during the week ending July 24th. The annual rate of mortality in these towns, which had been equal to 13·3, 12·9, and 12·5 per 1000 in the three preceding weeks, was again 12·5 in the week under notice. During the first three weeks of the current quarter the death-rate in these Scotch towns averaged 12·6 per 1000; in the 76 large English towns the mean death-rate during the same period did not exceed 11·3. The death-rates last week in these Scotch towns ranged from 7·9 in Leith and 11·2 in Edinburgh and in Aberdeen, to 17·6 in Paisley and 19·8 in Perth. The 448 deaths in the eight towns last week corresponded precisely with the number returned in the previous week, and included 45 which were referred to the principal epidemic diseases, against 36 and 40 in the two preceding weeks. These 45 deaths were equal to an annual rate of 1·3 per 1000, against 1·0 and 1·1 in the two preceding weeks; the rate last week from the same epidemic diseases in the 76 large English towns did not exceed 1·0 per 1000. Of the 45 deaths last week from these epidemic diseases in the Scotch towns, 14 resulted from measles, 14 from diarrhœa, seven from whooping-cough, four from diphtheria, three from "fever," and three from scarlet fever, but not one from small-pox. The 14 fatal cases of measles showed a marked increase upon the numbers in recent weeks, and included six in Paisley and five in Edinburgh. The deaths attributed to diarrhœa, which had been 12 and 11 in the two preceding weeks, increased to 14 last week; eight were returned in Glasgow, three in Dundee, and two in Edinburgh. The seven fatal cases of whooping-cough showed a considerable decline from the numbers in recent weeks; three occurred in Glasgow and two in Edinburgh. The four deaths from diphtheria were fewer by two than those in the previous week, and two of the three fatal cases of scarlet fever occurred in Glasgow. The three deaths referred to "fever" included a fatal case of typhus in Glasgow and one of cerebro-spinal meningitis in Edinburgh. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 71, 61, and 56 in the three preceding weeks, further declined to 49 in the week under notice, and were one below the number in the corresponding week of last year. The deaths in the eight towns last week included 17 which were referred to different forms of violence, of which nine occurred in Glasgow, four in Dundee, and two in Edinburgh. The causes of 26, or 5·8 per cent., of the deaths in the eight towns last week were uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·6 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 15·6 and 16·9 per 1000 in the two preceding weeks, declined to 14·4 in the week ending July 24th. During the first three weeks of the current quarter the death-rate in the city averaged 15·6 per 1000, whereas the mean rate during the same period did not exceed 10·9 in London and 12·6 in Edinburgh. The 110 deaths of Dublin residents from all causes last week showed a decline of 19 from the number returned in the previous week, and included nine which were referred to the principal epidemic diseases, against three and 11 in the two preceding weeks. These nine deaths were equal to an annual rate of 1·2 per 1000, the death-rate from the same epidemic diseases last week being equal to 0·8 in London and 1·0 in Edinburgh. Of the nine deaths from these epidemic diseases in Dublin last week, four resulted from diarrhœa, two from "fever," two from whooping-cough, and one from diphtheria, but not one from measles, scarlet fever, or small-pox. The four deaths attributed to diarrhœa were fewer by one than the number in the previous week. The 110 deaths at all ages [illegible] 24 of infants under one year of age and 24 of persons aged upwards of 60 years; the deaths of elderly persons showed a considerable decline from the numbers in recent weeks. Nine inquest cases and six deaths from violence were registered during the week; and 48, or 43·6 per cent., of the deaths occurred in public institutions. The causes of four, or 3·6 per cent., of the deaths in the city last week were not certified either by a registered medical practitioner or by a coroner; in London the causes of all but three of the 926 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was equal to 4·0 per cent.

THE SERVICES.

THE NEW DIRECTOR-GENERAL OF THE ARMY MEDICAL SERVICE.

Surgeon-General William Launcelotte Gubbins, C.B., M.V.O., has been appointed Director-General in succession to Sir A. H. Keogh, K.C.B. Surgeon-General Gubbins entered the service in 1885 and reached the rank of Colonel in 1900. He was appointed Surgeon-General in 1903. He served in the Afghan war of 1878–80, and took part with the Bazar Valley expedition under Lieutenant-General Maude in medical charge of the 5th Fusiliers, and subsequently of the headquarters staff; in 1879–80 he served with the Khyber Line Force under Lieutenant-General Bright in medical charge of the headquarters staff; he was also divisional sanitary officer and secretary to the Principal Medical Officer, and was present with the expeditions against the Mohmunds and into the Hissarik Valley (medal). He served with the Egyptian (1882) and Burmese (1886) expeditions, and in the South African war in 1899–1901 as principal medical officer of the 6th Infantry Division. He was present at the relief of Kimberley, the actions at Paardeberg, Poplar Grove, Driefontein, and the occupation of Bloemfontein. He took part in the operations in Orange River Colony, and was subsequently principal medical officer of Pretoria and the northern line of communication (medal with five clasps).

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Fleet Surgeons: G. Ley to the *Juno*, and D'A. Harvey to the *Highflier*, on recommissioning. Staff-Surgeons: A. C. Bean to the *President*, additional, as inspecting medical officer, auxiliary sick berth staff; C. H. Rock to the *President*, additional, to be lent to Yarmouth Hospital, temporary; N. H. Harris to the *Shannon*, P. T. Sutcliffe to the *Defiance*, and F. T. Lobb to the *Victory*, additional, for disposal; R. H. Mornement to the *Eclipse*; J. G. Watt to the *Hermione*, on recommissioning; J. E. H. Phillips to the *Roxburgh*, on recommissioning; and R. S. Bernard to the *Apollo*, on recommissioning. Surgeons: C. J. O'Connell to the *Roxburgh*, on recommissioning; G. T. Verry to the *Flora*, additional; and W. E. Ormsby to the *Halcyon*, additional, for the *Skipjack*.

ROYAL ARMY MEDICAL CORPS.

Captain H. D. Packer has taken over the duties of embarkation and disembarkation medical officer in Plymouth Garrison.

Major Charles W. Duggan retires on retired pay (dated July 28th, 1909).

The undermentioned Captains to be Majors (dated July 28th, 1909): Charles H. Hopkins, Arthur W. N. Bowen, William H. S. Nickerson, V.C., Hubert O. B. Browne-Mason, and Frederick S. Penny.

Lieutenant-Colonel G. E. Moffet, retired pay, has been granted leave of absence from August 2nd to 31st, with permission to travel in Germany.

Lieutenant-Colonel Sir Joseph Fayrer, medical officer of the Duke of York's School, has been selected for duty at Hong-Kong.

INDIAN MEDICAL SERVICE.

Captain H. C. Brown, I.M.S., Brigade Laboratory, Dera Ismail Khan, has been appointed a specialist in prevention of disease.

TERRITORIAL FORCE.

Royal Field Artillery.

3rd West Riding Brigade: Surgeon-Captain Percival Ellison Barber, from the 4th West Riding of Yorkshire, Royal Garrison Artillery (Volunteers), to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

Royal Army Medical Corps.

1st Highland Field Ambulance: John Douglas Fiddes to be Lieutenant (dated June 10th, 1909).

2nd North Midland Field Ambulance: Richard Milbourne West (late Captain, 5th Northern General Hospital, Royal Army Medical Corps) to be Lieutenant (dated June 9th, 1909).

1st Wessex Field Ambulance: Lieutenant Alexander W. F. Sayres to be Captain (dated June 13th, 1909).

5th Northern General Hospital: Captain Richard M. West resigns his commission (dated June 9th, 1909).

3rd Southern General Hospital: Officers whose services are available on mobilisation:—Arthur Latham Ormerod to be Captain (dated July 10th, 1909).

1st Welsh Field Ambulance: Lieutenant John F. Dwyer resigns his commission (dated June 17th, 1909).

Attached to Units other than Medical Units.—Captain Charles K. Bowes resigns his commission (dated June 15th, 1909).

For Attachment to Units other than Medical Units—Lionel Danyers Bailey to be Lieutenant (dated July 19th, 1909). The announcement of the transfer of Surgeon-Major Joseph Edward Bowser and of Surgeon-Lieutenant John Livingstone from the Westmorland and Cumberland Imperial Yeomanry is cancelled. Surgeon-Lieutenant-Colonel (Honorary Major in the Army) William John Naismith, D.S.O., from the Ayrshire (Earl of Carrick's Own) Imperial Yeomanry, to be Lieutenant-Colonel, with precedence as in the Imperial Yeomanry (dated April 1st, 1908). Lieutenant-Colonel (Honorary Major in the Army) William J. Naismith, D.S.O., is retired under the provisions of Paragraph 59, Territorial Force Regulations, and is granted permission to retain his rank and to wear the prescribed uniform (dated April 28th, 1909). Henry Randall Wadd to be Lieutenant (dated June 7th, 1909). Lewis Beesly to be Lieutenant (dated June 17th, 1909). Thomas Henry La Nauze Hewitt to be Lieutenant (dated June 23rd, 1909). Thomas Francis Roche to be Lieutenant (dated June 23rd, 1909).

Officers Training Corps.

Oxford University Contingent, Medical Unit, Senior Division: Captain Walter T. Brooks to be Major (dated July 12th, 1909).

THE UNIVERSITY OF LONDON TRAINING CORPS.

The military education committee of the University of London Officers Training Corps has issued a handbook for the use of officers and cadets and others concerned. It contains the Regulations of the Senate of the University of London for the military education committee, the names of the committee, rules of admission, and lists of members of the different units. The syllabuses of the different examinations for certificates are also included in the pamphlet.

The statue of the late Sir James McGrigor, Bart., first Director-General of the Army Medical Department, has been removed from the Chelsea Hospital to the new Royal Army Medical College in Grosvenor-road.

Surgeon-General H. R. Whitehead, C.B., Principal Medical Officer, Southern Command, inspected the barracks and hospitals at Exeter on July 26th, Taunton on July 27th, and Trowbridge on July 28th.

Correspondence.

"Audi alteram partem."

THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER

To the Editor of THE LANCET.

SIR,—Dr. A. Goodman Levy's letter in your issue of July 17th constitutes a valuable addendum to our joint report on the above subject published by us in your columns of July 3rd, and answers certain of the criticisms advanced by your correspondents in your issue of July 10th. The work which

Dr. Levy has done is of great interest as bearing directly upon the method we have advocated. We find ourselves unable to agree with Dr. Donald J. Munro as to there being any disadvantages whatever *in practice*, dependent upon the fact that ether and chloroform have different rates of vaporisation, provided that the mixture we advocate be administered as we have described. Instead of meeting with irregular effects, as might theoretically be supposed, we have obtained regular and equable results. Dr. J. D. Mortimer criticises our use of the terms "open" and "semi-open." We think Dr. Levy's letter will justify the distinction we draw between these two expressions. We are interested to learn that Dr. Desborough Brodie has employed the method we advocate, and with equally good results. Dr. Alexander Brown asks whether it is our opinion that the administration of C.E. mixture by the open method should supersede its administration by means of an inhaler devised by one of us. The fact is that when that inhaler was introduced the possibility of obtaining adequate anæsthesia *in all subjects* by means of the C.E. mixture administered from a Skinner's mask was not fully appreciated, and the passage in the work referred to by Dr. Alexander Brown therefore needs slight modification. At the same time, the inhaler in question, by reason of its wide air-inlet, is greatly to be preferred in point of safety to others of the Rendle type. Now, however, that the practicability of obtaining adequate anæsthesia by a simple Skinner's frame of particular dimension and construction is established, there is not that necessity for a semi-open inhaler with wide air-inlet that previously existed. Finally, we come to Dr. G. A. H. Barton's remarks. After directing attention to all absence of novelty in our contribution—which, we are sure, he will see is our misfortune rather than our fault—he suggests one or two improvements in our method. These, however, appear to us to be rather on the side of complexity than on that of simplicity. We do not ourselves attach great importance to rapidity of induction, except in certain special types of subject, believing that the best kind of anæsthesia *during operation* is to be obtained by gradual rather than by rapid induction methods. At the same time, we tender him and all your other correspondents our best thanks for discussing a subject which we think is of importance to all who administer anæsthetics, and particularly to those practitioners to whom simplicity of procedure specially commends itself.—We are, Sir, yours faithfully,

FREDERIC HEWITT.
J. BLUMFELD.

July 19th, 1909.

NATIONAL UNION OF ASSISTANT PHARMACISTS.

To the Editor of THE LANCET.

SIR,—I am instructed to forward you a copy of the protest which has been sent to the Pharmaceutical Society on behalf of our union.—I am, Sir, yours faithfully,

S. CARLTON FARRER, M.P.S.,
Honorary General Secretary.

Birmingham, July 13th, 1909.

[COPY.]

To the Pharmaceutical Society, London.

[illegible] members of the National [illegible] ully considered the com- [illegible] othecaries asking *for* the [illegible] s' Certificate to the rank [illegible] ection in pharmacy most vitally affected by the proposition made therein, and as members of the Pharmaceutical Society and registered chemists and druggists, we hereby emphatically protest against their entrance on any such terms; and we respectfully urge upon you as our representatives to secure to us the utmost possible protection from such unfair competition.

[illegible] knowledge.

(2) The whole period of training need not exceed six months, as contrasted with the three years minimum required of candidates for the Minor qualification.

(3) No preliminary examination is demanded, thus reducing the educational standard below that which would be required for entrance to any profession.

(4) The skill and knowledge required for examination as published in [illegible] onal value of the [illegible] ing condition be

"That whilst the Pharmaceutical Society is willing to register candidates as pharmaceutical *chemists* or *chemists and druggists* who can show that they have passed an examination equivalent to the major and minor examinations respectively, conducted by any responsible examining body such as the 'Society of Apothecaries,' 'The Civil Se[illegible] Colonial body, they would call [illegible] Apothecaries to the fact that [illegible] 'evidence satisfactory to the [illegible] Society that they are persons [illegible] to be so registered,' and the [illegible] Assistants' Certificate for a peri[illegible] *not satisfy such requirements.*"

[illegible] vithout corresponding registration under the [illegible] t you will give that [illegible] our request demands [illegible] is to many assistant [illegible]

(Signed)

J. WILSON.
LEONARD STEVENSON, M.P.S.
EDW. S FRANCIS, M.P S.
JAMES SMITH.
JAS. J. B. WALDRON, M.P S.
C. TERRY HOLLOWAY, M.P.S.

S. CARLTON FARRER, M.P.S.
W. J. FINDLAY.
VICTOR BOTTOMLEY.
EDWIN A. LENTON, M.P.S.
JOSEPH M. DOWTY, M.P.S.

Birmingham, July 11th, 1909.

A CERTIFICATE OF THE CAUSE OF DEATH FOLLOWED BY AN INQUEST.

To the Editor of THE LANCET.

SIR,—The annotation in THE LANCET of July 24th, p. 243, under this heading raises the question as to whether the medical man in attendance during the last illness of a person has the power to decide whether he shall give a certificate of death or not. In that annotation you write: "The far more frequent cause of complaint against medical men arises out of the withholding of certificates which cannot conscientiously be granted, but which in the opinion of the coroner or the jury would save the necessity of an inquest." As a matter of fact, the medical man has no such discretionary power. It is obligatory upon him to certify the cause of death even if violent. Section 20 of the Births and Deaths Registration Act, 1874 (37 and 38 Vict., c. 88), is most explicit upon this point. By that section it is enacted:—

> In case of death of any person who has been attended during his [illegible]

It is a great pity that this fact is not fully appreciated and acted upon by medical men. The duty of the medical man would simply be that of signing a certificate in all cases of death, whether due to natural or violent causes. The unpleasant, responsible, and unremunerated work of deciding whether an appeal to the coroner is necessary would thus fall upon the registrar, where it is meant to fall by the Act. The medical man would then be saved those awkward situations you quote. I am, Sir, yours faithfully,

EDWIN J. TOYE.

July 26th, 1909.

RE-INFECTION IN SYPHILIS.

To the Editor of THE LANCET.

SIR,—If you will excuse this belated letter I should like to make a few comments on Mr. Hutchinson's interesting and instructive article in THE LANCET of May 29th on Auto-inoculation and Re-infection in Syphilis, which I have only just seen. In the first place, it is only fair to the memory of Ricord to mention that in later life he recanted some of his earlier statements—for instance, the non-contagiousness of secondary lesions. With regard to the question of re-infection, he made the following remarks in a letter to Mr. W. Acton (published in the *British Medical Journal*, 1872, Vol. II., p. 228): "Now that we have authentic examples of fresh contagions of indurated chancre, with consecutive evolution of the whole series of constitutional symptoms, this proves that patients have been cured, just as the possibility of contracting small-pox afresh or of vaccination again taking proves that the first variolous or vaccine influence has ceased." Mr. Hutchinson attributes the intermittent method of mercurial treatment to Ricord, but I think it was Fournier who introduced the "chronic intermittent treatment" of syphilis. Whether, as Mr. Hutchinson suggests, this method is less efficacious in curing syphilis than the continuous method, and consequently less likely to be followed by re-infection, is a moot point which would require much evidence to decide. With regard to infection of the subjects of inherited syphilis with the acquired disease, the late Professor Tamowsky published a number of cases of this kind which he called "binary syphilis," and considered that this combination has a more lethal effect on the offspring of such subjects than inherited syphilis by itself. As I pointed out in my book on "Syphilology and Venereal Disease," it may be possible for a patient who has had two attacks of syphilis to be suffering from the effects of both attacks at the same time, for parasyphilitic effects, such as tabes or general paralysis due to the first attack, may appear after the date of re-infection. It is true that Krafft-Ebing obtained negative results from the inoculation of general paralytics with syphilis, but I believe authentic cases of syphilitic chancres in the subjects of general paralysis have been recorded.—I am, Sir, yours faithfully,

C. F. MARSHALL.

St. John's Wood Park, N.W., July 25th, 1909.

MALTA FEVER ON THE RIVIERA.

To the Editor of THE LANCET.

SIR,—Referring to Dr. J. K. Fowler's letter in THE LANCET of July 24th (p. 254), I remember well a case of Malta fever I attended three and a half years ago at Cannes. I made careful inquiries at the time and I think that a similar sequence of events to that recorded was not very uncommon with regard to the Riviera generally about that time. The evidence is not in my own experience and I give the impression resulting from my inquiries for what it is worth. In my own case, which was also an undoubted one, I was quite unable to find the source of infection, though I tried carefully to do so.—I am, Sir, yours faithfully,

R. NEVILLE HART, M.D. Cantab.

Bournemouth, July 24th, 1909.

A VEGETABLE SOURCE OF IRON.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 17th there is an interesting annotation (p. 164) on a vegetable source of iron. The observations of two French workers are quoted as showing that the dried root of the dock, *Rumex obtusifolius*, contains 0·447 per cent. of iron in a combination analogous to the ferric derivatives of the nucleones. It is perhaps worth while observing that such a preparation of iron with nucleins as a base has recently been obtained which contains as much as 8·0 per cent. of iron. It is called *Fer Ascoli*, and I can speak with confidence as to its value in the treatment of anæmic girls.—I am, Sir, yours faithfully,

A. BUTLER HARRIS, M.A., M.B. Oxon.

Loughton, Essex, July 25th, 1909.

TROPICAL ADENITIS AND PLAGUE.

To the Editor of THE LANCET.

SIR,—In connexion with the annotation on Tropical Adenitis and Plague which appeared in THE LANCET of June 12th (p. 1701), I may say that, prior to our plague visitation, we had many cases of bubo which were certainly not plague buboes nor the usual ordinary bubo—simple or venereal. I mentioned this fact to Professor Simpson, and he told me that in Calcutta these premonitory buboes had also been noticed just before a plague outbreak.

I am, Sir yours faithfully,

A. MARIUS WILSON, M.D. Durh.

Cape Town, July 6th, 1909.

THE MEDICAL TREATMENT OF LONDON COUNTY COUNCIL SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—The attention of my committee has been drawn to the statement in the published report of the meeting of the Education Committee of the London County Council held on July 14th, referred to in THE LANCET of July 17th, that the "Paddington Green Children's Hospital will take 20 ophthalmic cases a week." I am requested to inform you that this statement is incorrect, and that no such offer has been made from this hospital.

I am, Sir, yours faithfully,

W. H. PEARCE, Secretary.

Paddington Green Children's Hospital, London, W., July 24th, 1909.

⁂ The authority for the statement was the preliminary report of the Education Committee of the London County Council.—ED. L.

THE TERRITORIAL MEDICAL SERVICE.

(FROM A SPECIAL CORRESPONDENT.)

I. ORGANISATION.—DUTIES IN CAMP.

THE following notes are intended as an "appreciation" of the medical organisation of the Territorial Army, in so far as routine duties and sanitation in camps of exercise are concerned, and the relationship of these to active service in the field. Questions connected with the removal of sick and wounded will not be included.

Organisation.

Each division of the Territorial Army is commanded by a General Officer (G.O.C.), and on his staff is appointed an Administrative Medical Officer (A.M.O.) with the rank of colonel, who is a Territorial medical officer. The G.O.C. is the responsible head of the entire division, and the A.M.O. is responsible to him for the efficiency of all the medical *personnel* and equipment in his division for war, as well as for the physical efficiency and health of the entire division. He is the recognised adviser to the G.O.C. on all questions connected with the health and sanitation of the division, and he is also commanding officer (O.C.) of all the Territorial R.A.M.C. in the division. To assist the A.M.O. two staff officers (medical) are allowed, one being a retired field officer of the R.A.M.C., and the other a specialist sanitary officer or medical officer of health from the Territorial Medical Force. A permanent office and clerical establishment are also allotted. Each unit (regiment, battery, &c.) in the division has a Territorial medical officer attached, who is responsible for the physical and medical efficiency of his unit and also for the sanitation of the area they occupy. The Senior Medical Officer of each brigade (S.M.O.) is responsible in the same way for the brigade as a whole. Orders connected with general medical questions and sanitation affecting the entire division are issued by the A.M.O. in the name of the G.O.C., while purely professional orders are issued in his own name. Likewise orders affecting brigades alone or units alone are issued in the name of their respective commanders by the S.M.O. or M.O. respectively, and purely professional orders in their own names. The A.M.O. of a division, S.M.O. of brigade, and M.O. of regiments make inspections of their respective charges, each having in view sanitation of area, physique of the men, their freedom from disease, ventilation, clothing, cleanliness, food, and purity of drinking water. The sick and wounded are treated in hospitals (field ambulances, general hospitals, &c.), and while in hospital the patients are under the command of the medical officer in charge. Each hospital is a unit in itself and bears the same relationship to the G.O.C. and brigade commander as any other unit under their charge. Three field ambulances are allotted to each division, one to each of its brigades; the mounted brigade field ambulance is a smaller unit. The remaining medical unit is the general hospital which trains with the division in peace but belongs to the corps troops in war.

The P.M.O. of an army corps, the A.M.O. of a division, the S.M.O. of a brigade, and the M.O. of a unit are the respective advisers of their commanders on all questions concerning the health and sanitation of their respective charges.

Duties in Camp.

One of the most important duties of Territorial medical officers will be the education of all officers and men of their units in the essentials of camp and personal sanitation. From the time they enter camp, the conditions of civilian life (which have aptly been compared by a distinguished army sanitarian to the turning of a tap for a pure water-supply and the pulling of the handle of a modern water-closet for disposal of excreta, with municipal plumbers at hand to remedy defects) are left behind, and new conditions prevail which, if not carefully attended to, will prove a source of danger, not only to the individual, but to the entire community under canvas. The two essential principles of camp sanitation either on manœuvres or on active service are, firstly, the immediate burial or destruction of all excreta and refuse, and, secondly, the strict preservation of all water-supplies from contamination. The *laissez faire* fashion in which some officers used to treat these subjects has been a matter of comment, as well as the general apathy which until recently prevailed in the rank and file in matters of sanitation, the principles of which still provide virgin soil for the Territorial medical officers to work on. The starting-point of all sanitary education in the regular army begins now in the officer at Sandhurst and in the recruit at the depôt, and each officer on promotion is now forced to pass an examination in elementary sanitation. The rank and file are very thoroughly instructed in all matters relating to elementary hygiene and sanitation, and all ranks of the Territorial Army must be the same. The routine sanitary measures laid down for the life of the Territorial in camps of exercise will be carried in their minds, to a greater or lesser degree, on service in the field, and finally back again into civilian life.

If a unit has a "chief" strict as to the details of sanitation, not only of his camp and its environment, but also of the personal hygiene of his men during training, we may rely on it that such a unit will be "fit" and in good serviceable condition when put to the test of war. If, on the other hand, you find his tents on manœuvres and their occupants neglected in these matters, such a condition of affairs will never tend to improve on service, but rather get worse, and this unit will invariably break down with enteric fever or other fell dirt disease. Until such time as Territorial regimental officers take these matters up (and they must take them up), their colleagues in medical and sanitary charge of every unit will have to share responsibility with company officers for the following duties:—

1. The physical, sanitary, and medical efficiency of their units.

2. The training of such units in the rudiments of elementary sanitation.

3. The training of, and supervision of, the "sanitary squad" in latrine making, camp conservancy, and especially the conservancy of water-supplies.

4. Strict supervision of cook-houses, cooking vessels, and cooks, the latter especially in camp, where their methods ought to be gone into most fully and studied. All men of a unit should get some sort of practice in field cooking, as on service individuals may have to cook for themselves.

5. The instruction of the "first aid" *personnel* of the unit.

Every unit should be medically inspected as often as feasible during training, the men being paraded and the medical officer walking round and carefully scrutinising each man. In some cases the men are paraded on the parade ground with jackets unbuttoned, with or without shirt open and chest exposed, or again, jackets may be off and shirt sleeves rolled up with arms and forearms bare, extended, and supinated and pronated alternately, as the inspecting officer walks down the ranks. Or, again, inspection may be made in mounted corps as they finish stables, or when not in camp in the drill hall. Wherever an inspection is made its thoroughness must be essential, and to ensure this, where climatic conditions, such as exposure to sun, rain, or wind, may prevent it, a drill hall, marquee, or sheltered shed may be suggested as the proper place, thus ensuring comfort to the men and a more efficient and thorough inspection to the [illegible] edical [illegible] ny, to [illegible] when going round he [illegible] missioned officer [illegible] this officer should [illegible] not available owing to more urgent work to attend to (which ought not to be always the case), he should send his understudy (assistant adjutant) and always one or two junior officers of the regiment for instruction in military hygiene.

It is necessary, if sanitary measures are to be efficiently adopted in the army, to obtain help from regimental officers, and, if medical officers are to get practical assistance, the regimental officers must see and be made to understand how sanitary measures are carried out, and be pointed out defects in all matters relating to camps, food, clothing, and everything pertaining to the hygiene of barracks and the health of the soldier. Young regimental officers in some cases my perhaps take an unfavourable view of such compulsory instruction at first, but if tact is used, and the medical officer shows quietly but firmly that it is in their own interests that they should come and pick up these facts, matters which they will be thoroughly examined in later on for promotion, and of which more can be taught in a five minutes' explanatory walk round than could be understood in weeks of reading, success is certain. The medical officer should not play the rôle of a schoolmaster; let him rather make the task interesting by asking a few questions as to the regulation amount of the various kinds of rations, scales of clothing, &c., and point out how meat is judged and the difference between old and young meat by the bones; or again, let him draw attention to defects in the physique of the soldier, such as hammer toe and varicose veins, explaining their cause and simple remedy; if this be done he will find, as the writer has found, that all officers will not look on such a "walk round" as a bore, but will turn up again and again, and begin to really take an interest in this branch of their profession.

Medical inspections of units are not made for fun by the particular medical officer making them, though some people seem to think he has nothing to do but "hunt bad smells" in or around barracks. Such visits are made in accordance with the special orders laid down in the King's Regulations, and should such inspections be omitted or fail in thoroughness, a medical officer could, if necessary, be severely punished in the same way as an officer commanding a regiment could also be punished if he neglected to carry out rules laid down for prevention of disease when they had been recommended to him. A medical officer inspecting tents or men is not a faddist; he is, or at any rate he should be, thoroughly earnest; he is the person responsible for the health of the troops, and he is the person who should lose his commission if the work is neglected, unless he delegates his responsibility by reporting the matter to "higher authority." As long as there is no such report, higher authority takes it for granted "all is well," and trusts the medical officer; if the latter abuse this trust by not reporting matters that are not remedied regimentally, he can be court-martialled.

Medical inspection of [illegible] peace time should be made [illegible] em of passing a complete unit [illegible] actory from a medical officer's point of view, and a nuisance to every one concerned regimentally. If on such occasions the men are numbered off it may often be found that a large proportion of the regimental strength are not accounted for on parade. The important point about the absentees is that we know full well that it is among them the very men we want most to see are to be found—the men who do not, for reasons best known to themselves, wish to see their medical officer. The best way out of this most apparent frustration of medical inspection is to do away with the supposed, and it is maintained impossible, inspection of a unit as a whole unit. Even if a unit were mustered at full strength on parade, the task of proper inspection would be too much for one medical officer, who has his other routine work to do as well in the same morning. Every unit is divisible: if artillery into sections, if infantry into companies, and if cavalry into squadrons. Let these sub-units parade, let one company of an infantry regiment parade alone at as full strength as possible one day; let another company parade the next, and so on, and let the inspection be thorough and searching. Have a roll with the names of the absentees on each parade prepared by the orderly-sergeant, and let him hand it to the medical officer inspecting, who should keep it for reference; and let the absentees come up for inspection on the next or following days to the same medical officer at some place appointed by him—for instance, the hospital—and let him examine and mark them off as examined on his roll. Thus a regiment or other unit can be given a clean and true "bill of health," say once a training.

The day and hour for medical inspection should be carefully selected to suit all parties concerned; the day chosen should not, if possible, interfere with any of the men's ordinary duties or recreations, and the hour fixed should not delay meals. The men should parade with their jackets off; shirts and vests should be open in the front and rolled back sufficiently wide to show as much of the chest as possible; and shirt sleeves should be rolled high up above the elbows. Shirt inspections are important, especially on manœuvres, where men should be advised to wear either flannel shirts or "greybacks," and discard linen and cotton ones or singlets, all of which are dangerous when wet or when worn abroad under khaki drill in the sun. The cleanliness of the shirt, and its wearer, can also be ascertained, as well as some idea of the upkeep and replenishment or otherwise of these articles, which, unfortunately, are not a Government issue as in the regular army. In a drill hall, men for inspection should have their boots and socks off, and their trousers rolled up above the knee so as to fully expose the calves of their legs. Boots and socks should be laid on the ground for further inspection, as to fit and repair, if necessary. Feet inspections are most essential and should be carried out as frequently as possible; their first benefit is cleanliness. If men expect feet inspections they will prepare for them beforehand. The many irregularities in feet, bunions, corns, and ingrowing toe-nails which lead to men breaking down on the march, can be looked for and pointed out to the company chiropodist for attention (chiropodists should be appointed as in the regular army); the inside of the ankles can be glanced at for itch, a most common place for it to originate in army life.

The men having paraded in the dress just described the medical officer should commence at the front rank man of the first file, and walk down the front line, the men at the same time extending their arms and pronating and supinating their forearms alternately as he passes, in order that he may see both aspects of the arm. Boils, blind or otherwise, are often found in the mounted troops and should not escape notice. A general glance at each man's hair, face, teeth, and chest, carried on to the forearms and feet, occupies but a few seconds. The chest should be scanned for tinea versicolor, a not uncommon skin complaint in the service, due to men wearing unwashed flannel next the skin; it is a harmless, though unsightly, disease and tends to spread rapidly. Having inspected the front rank and having perhaps noted irregularities such as want of cleanliness in regard to the teeth or other matters, the front rank should be directed to take one pace forward, and the medical officer should walk back again behind the front rank inspecting the backs of their legs for varicose veins and take a general glance at head and neck for boils, and also have a glance at their clothing as to its fit, and whether trousers are too tightly braced up, &c. The rear rank is inspected in like manner to the front rank, after which the men can be dismissed and their camp inspected.

Tents should have their flies (kanats) rolled up first thing in the morning and left open all day, weather permitting. Men should leave the door open at night, and the maximum number of men sleeping in a tent should not exceed 12. Before rain, trenches should be dug round tents and side drains should carry away surface water. In fine weather tents should be struck at least once every four days and pitched on a new area. If tent boards are used they should be removed at the same time and the ground swept and exposed to bright sunshine for purification. All bedding should be spread out in the sun and aired daily.

The tents should be frequently inspected and all matters appertaining to general cleanliness, ventilation, washing utensils, beds and bedding, and hair- and tooth-brushes looked into. A medical officer should know exactly the number or scale of articles of clothing and bedding allowed to each man and how often they should be renewed, changed, and washed, and he should ask questions of these matters of the young regimental officers who should accompany him on his rounds. If necessary, a closer medical inspection should be made to eliminate infectious and rupture cases amongst the men of a unit; such a proceeding must always be rigidly enforced prior to active service, as if these cases are not weeded out they will assuredly break down in a campaign and fill the hospitals.

On the relationship that should exist between a medical officer of a unit and the commanding officer of his unit, there is little to comment on. The medical officer is the staff officer in all matters appertaining to the health and sanitation of the unit; he should advise on all matters tending to the health efficiency of the troops under his immediate charge, and keep a special eye on any of the weaker recruits and satisfy himself that they are not being overworked with drill, gymnasium, &c., and also see that the men have proper recreation, outdoor and indoor; as such advantages keep the men from vice and liability to contract disease, especially venereal disease. When under canvas all officers commanding units should be immedially informed by their medical officers of the appearance of any particular infectious disease, more especially enteric fever, among any of the men of their units, or other person in the locality, in order that they may assist their medical officers in every possible way to stamp out the disease, and prevent its extension in their own and to other units of the army. This is essential, for if we are to fight successfully against enteric fever in the field it is of the greatest importance that practice should take place in time of peace, with the same means and on the same scale, if possible, as in war time; and also the more we see of enteric fever in peace time the greater will our experience be for epidemics in a campaign.

(To be continued.)

THE ORGANISATION OF THE MEDICAL PROFESSION IN GERMANY: THE STRUGGLE AT COLOGNE.

(FROM OUR SPECIAL COMMISSIONER.)

Cologne, July, 1909.

THE work of organising the medical profession in Germany for the defence of its economic interests has been taken in hand at a comparatively recent date, though there have been medical societies in existence for some 40 years. Further, these local societies were federated together under the title of the Deutscher Aerztevereinsbund. Nearly all the local societies of medical men are members of this amalgamation or bond and it holds an annual congress, Der Deutsche Aerztetag. Many local societies are not unlike the local medical societies that exist in various parts of England. They are highly respectable institutions where scientific papers are sometimes read and pleasant dinners organised, but which have never achieved anything whatsoever in regard to the great economic struggles of the day. Even when these local societies united one with the other and held annual congresses they did not do anything that was likely to produce a practical result. If there was a crying grievance this amalgamation might appeal to the authorities and perhaps even went so far as to draw up and present a petition. Beyond this, however, it did not venture. At last, some eight years ago, Dr. Hartmann of Leipsic took the initiative in organising a fighting union. He explained that protests, petitions, and complaints were of no use whatsoever unless there was a force behind them that could make itself unpleasantly felt if no attention was paid to the demands brought forward. For this purpose he enrolled members and they paid an annual subscription of £1. The society was named the Organisation des Verbandes der Aerzte Deutschlands, but is more familiarly and generally called the Leipziger Verband. Its object is to watch over the economic interests of the medical profession, and its success in quickly recruiting members is due to the undoubted fact that the economic condition of the profession is getting worse and worse every year. When the society had been in existence three years it was found that the subscriptions paid by the members did not supply a sufficiently large capital to enter upon any very great struggle, and it was determined to raise £25,000 in shares bearing 5 per cent. interest, or in donations. Many donations were made, varying in amount from 1*s.* to £50. But large sums were required, as medical men had to be helped who were suffering because they had *obeyed* the orders of their union, while it was also sometimes expedient to buy off those competing against the organised members of the profession.

The Leipziger Verband, however, is not merely organised for the purpose of strikes. It has a central bureau or exchange, which acts as an agency to secure employment for medical practitioners. While it seeks to prevent medical practitioners accepting employment under contract and on conditions opposed to the principles of the medical profession, it, on the other hand, endeavours to find employment that is in accordance with the rules and under conditions considered legitimate. Further, the Verband comes to the rescue of the widows and children of its members. Though only eight years old, this society has now carried everything before it. Finally, and quite recently, the Deutscher Aerztevereinsbund has joined the Verband, so that the joint membership now amounts to about 23,000 medical men. There are in the German Empire something like 30,000 qualified medical men, but as this includes military surgeons, professors at universities, and others who are not in practice, there are probably not more than from 2000 to 3000 active practitioners who are not in the union. Nor is the organisation limited to qualified practitioners; it has permeated the ranks of the medical students. Thus time is taken by the forelock, and the student taught what his duties will be when he has passed his examinations. This is a most practical and useful precaution, for it is the young, inexperienced, newly qualified practitioners who often accept the offers made without realising the evil consequences that will result to themselves and to their profession. There are not only the offers made for contract work in respect to the working classes, but in various towns middle-class and well-to-do sections of the community have endeavoured to constitute themselves into friendly societies and contract for medical attendance. Thus the scope for private practice would be still further restricted. As it is, one-third of the population of Germany is removed by law from private practice as they come under the scheme for compulsory insurance. This applies to those whose incomes do not exceed £100 per annum. But if the people who have larger incomes are going to organise schemes of voluntary insurance little or nothing will remain. Therefore, all the members of the Verband are pledged not to treat with or accept employment in the service of any such mutual insurance association or middle-class friendly society.

A great number of minor disputes arise in all parts of the empire. Thus the other day at Berlin a rich widow founded an institution for the benefit of her employees and laid out £10,000 for this purpose. But in practice the medical attendants did not receive more than 6*d.* per consultation. Doubtless this widow lady is deeply indebted to her employees, who by their work have built up her fortune, but the medical men are not in the least indebted to them. Therefore, they have inscribed this institution on their list of places where offers of employment are not to be accepted. Altogether, a reference to the medical press will show that throughout the empire there are generally more than 100 different places where members of the profession are warned not to accept employment. In the majority of these numerous disputes it is only some one institution that is affected, and the fate of not more than one or two medical practitioners is at stake; but at times, on the contrary, there is a large strike. Of these more serious struggles the present strike at Cologne is a notable example. The free choice by the patient of his medical attendant is the chief point at issue. In Germany, as in France, this is the principal cause of most of the disputes. In speaking of the Compulsory Insurance Law the word *Cassa* (Fr., caisse; Ang., cash) is generally employed. It is the *Cassa* which engages the services of medical men and pays them. Thus the *Cassa* is a sick club, or rather is the committee that collects the funds of a sick club according to the Law on Compulsory Insurance, and effects the necessary payments. The medical officer is not paid according to the service he actually renders, but according to the number of persons he has on his books. He receives from 4 to 5 marks (or shillings) per member per annum. This is the same sum as is paid in England by the better class of clubs and friendly societies, but there is this great difference, the German practitioner obtains the entire sum; there are no deductions. In England the medical practitioner has often to supply medicaments as well as advice, and that costs him from a quarter to a third of his receipts; or the members of a club pay 4*s.* or 5*s.* a year, but the provident dispensary, club, or society takes this money, pays for drugs and working expenses out of it, and only gives the balance to the medical practitioners. Thus when some years ago I looked into the accounts of the Leicester Dispensary I found that of the 4*s.* paid by the members the medical officers only received 1*s.* 10*d.* Nothing of this sort exists in Germany; from 4 to 5 marks a year may be only a small sum, but in any case, such as it is, the German practitioner receives the sum net—that is, without any reduction whatsoever.

In Cologne there are some 400 medical practitioners, and of these about 80 were employed by the local sick clubs. There were 120,000 workmen inscribed in the Cologne *Ortskrankenkassen* and 20,000 families. If we estimate the families at an average of five members each we get a total population of 220,000 enrolled in these sick clubs, among whom medical practitioners cannot hope to obtain a private patient. In some towns which are purely industrial centres and where there is not a large residential and tourist element as at Cologne, the proportion of the population enrolled in sick clubs amounts to 80 per cent. This is especially hard in regard to the families; the payment is 15*s.* per annum per family, which, on an average, means a good deal less than 5*s.* each person, and it is the women and children who very generally require more attendance than the men. But if this pay is small it is certain. In England the situation is seriously complicated by the difficulty of collecting the money and the cost of paying the collectors. In Germany the employer deducts from his workmen's wages the 1 to 2 per cent. of their wages which they have to contribute to the sick fund, while he is by law compelled to add half as much as their contributions amount to, so that two-thirds are paid by the workmen and one-third by their employers. The principle of self-administration prevailing throughout, the management is mainly in the hands of elected representatives of the workmen, aided by the contributing employers and acting under the supervision of the public authorities. So far as possible there are sick clubs for each particular trade, as, for instance, the Builders' Sick Club or the Miners' Sick Club. Management is much easier when all the members have similar risks due to the conditions of employment. The managing boards or committees, as a rule, prefer engaging medical officers themselves. They want the medical officer to be their servant. They want to order him about and reprimand him when they feel so disposed, and the medical profession object to such a state of affairs. They claim that the only persons they have to consider are their patients, and will not tolerate the interference of a committee of workmen standing between them and their patients. The law has decided that all workers who do not earn more than £100 a year must insure against sickness, and has established the necessary machinery for carrying this out and for effecting the necessary payments. But the law leaves the patient free to seek the advice of any medical practitioner who is willing to attend him for the payment which the sick clubs are able to give. At Cologne, however, the sick clubs selected from 80 to 100 practitioners and compelled their members to consult these men and none other.

In 1903 the Deutscher Aerztevereinsbund held its congress at Cologne, and having passed resolutions in favour of securing for the patients the free choice of their medical advisers, called upon the local medical societies to make an effort in this direction. Great enthusiasm was displayed in the cause. Some of the largest sick clubs might have had as many as 20 medical officers in their service, so the members of these clubs had a comparatively large choice of medical advisers; other clubs, however, had only two medical officers, and some only one, so that the members of these clubs had no choice. But by throwing this club practice open to all the medical men of the town the patients, whether belonging to large or to small clubs, would be able to choose from among about 300 medical practitioners. Nevertheless the administrators of the sick clubs would not accept this principle, and ultimately, in 1904, a general medical strike was declared. The strike was to secure for the public the free choice of medical advisers, and for the medical advisers a uniform annual payment of 5 marks per member of the sick clubs. The whole of the medical staff of the clubs joined the strike, and this was all the more remarkable as the object to be attained meant a reduction in their income.

The sick clubs at once set to work to import medical officers and succeeded in securing the services of from 32 to 35 practitioners. They were engaged at a fixed salary, varying from 5000 to 8000 marks per annum. Fortunately for the medical profession the Government has set a limit to the amount of work a medical man is supposed to do, and it is the law that no medical practitioner shall have more than 2000 members of a sick club on his list. Consequently the Government interfered and ordered the committees of the sick clubs to come to terms with the members of the profession so as to secure the services of a sufficient number of medical officers. A five years' agreement was then drawn up with the local society of the Cologne practitioners. The payment of 5 marks per member and the free choice of medical adviser was the accepted basis of the agreement. Thus and in consequence of the intervention of the Government the strike was fully successful. But there remained a sore point—the imported medical men. It was very essential to get rid of them, and it cost a great deal of money to persuade them to go. They had to be compensated to the extent of from £400 to £720. However, with the exception of four or five they all accepted and went. But for some years the medical practitioners of Cologne had to sacrifice a considerable part of the 5 marks they received from the members of the sick clubs so as to provide the means to compensate the imported practitioners and send them out of the city.

Unfortunately the arrangement was only valid for five years and it came to an end on Feb. 1st last. Thereupon the sick clubs declared they would go back to the old arrangement, and the medical practitioners on their side replied that in such a case they would have to strike again. But the situation was no longer favourable. The strike was not so unanimous, as 14 medical practitioners did not agree that it was necessary to strike, and, on the other hand, the sick clubs were able to import a much larger number of medical officers. In a very short time, by making offers of from £300 to £500 per annum, they were able to import more than 60 practitioners. The strike in 1904 only lasted four weeks; the present strike has already lasted as many months. The Government has now no legal reason for interfering, as in the present instance the sick clubs have secured the services of a sufficient number of medical officers. Thus matters have reached a deadlock. The chief hope is that some of the imported men will grow tired of the ignominious position they occupy. Of course, they are ostracised by the whole profession. Deputations from the medical societies constantly call on them and remonstrate. They excuse themselves by pleading poverty and want of practice. A few deny the principle of the free choice of medical advisers and try to argue that it is not a good principle. But as some of these men have already proved failures as practitioners, the hope is entertained that the members of the sick clubs will themselves get dissatisfied and clamour to go back to their old medical advisers, the medical practitioners they themselves selected, instead of being as at present forced to consult imported failures. Some attempts have been made to rouse the members of the sick clubs, but in Germany the workmen are very quiet; they follow meekly their leaders and rarely venture to criticise and take their own business into their own hands. During the five years of the agreement following the strike of 1904 a working man of Cologne could select any one out of 300 practitioners to attend to him when ill. Now he must content himself with the service of the man imposed upon him.

The medical union is making a good fight with this argument. For the moment the struggle goes against them, but mainly because it is limited in extent so that it has been possible to secure the services of a sufficient number of imported practitioners. If, however, a similar contest broke out simultaneously in several large centres, then considering that 23,000, that is nearly all the medical practitioners of Germany, are enrolled in the great national medical union or Verband, the supply of imported men might well become altogether insufficient. In any case, the German medical profession is giving a good example of solid organisation and of solidarity.

Death of Eminent Foreign Medical Man.—The death is announced of Dr. Gustav Christ-Lott, professor of gynæcology and senior physician to the Gynæcological Department of the Polyclinic, Vienna.

BRISTOL AND THE WESTERN COUNTIES.

(From our own Correspondents.)

The British Dental Association.

The annual meeting of the Western branch of the British Dental Association was held at Clifton on July 16th and 17th. There was a good attendance of members. The annual report stated that the branch had now 124 members. The financial statement was satisfactory. Mr. T. Taylor Genge gave the presidential address, in which he alluded to the subject of the anæsthetics Bills. He said that they were all doubtless of opinion that some legislation should be enacted to ensure the administration of anæsthetics by none but skilled and qualified persons, but legislation which was at present under consideration was certainly very unfair to the future licentiate in dental surgery, who from the training he received should certainly be allowed to administer nitrous oxide gas. To deprive him of doing so would not be to the best interest of the public, and would be neither just nor expedient. The annual dinner took place at the Clifton Down Hotel. It was decided that the next annual meeting should be held at Plymouth, with Mr. G. R. Brittan as president.

The Medical Officer of Health of the County of Somerset.

Dr. William G. Savage has been appointed medical officer of health and chief medical inspector of schools for the county of Somerset at a salary of £700 per annum. Dr. Savage has been medical officer of health of Colchester since March, 1903. He has also held the appointment of bacteriologist to the Cardiff Public Laboratory. For the past three years he has been specially employed under the Local Government Board in carrying out investigations upon food poisoning and the bacteriology of milk.

Memorial to the late Mr. B. L. Powne.

The members of the friendly societies of Chard and the district have placed a handsome granite monument in the Chard cemetery as a memorial to the late Mr. Benjamin Lamb Powne, M.R.C.S. Eng., L.S.A. Mr. Powne had been for many years in practice at Chard, where he was medical officer to the first district of the Chard union and workhouse, and also held several club appointments.

Hospital Saturday in Plymouth and Devonport.

July 17th was observed in Plymouth as Hospital Saturday, when collections were made for the South Devon and East Cornwall Hospital. The hospital at the close of 1908 had a deficit of nearly £3500, and the committee has issued a strong appeal for funds. An effort is being made in Plymouth to exceed the record amount previously raised for the Fund, which in 1895 was £748. July 17th was also observed in Devonport as Hospital Saturday, and a special endeavour was made by the Working Men's Committee to secure a much-needed augmentation of the funds of the Royal Albert Hospital.

The University of Bristol.

Sir Isambard Owen, whose appointment to the Vice-Chancellorship has delighted those interested in the University, has resigned the Principalship of Armstrong College, Newcastle-upon-Tyne. The resignation was accepted by the council of the College with expressions of regret, with thanks for help given during his tenure of office, and with congratulations on his new appointment.—At a meeting of the council held on July 23rd Professor J. Michell Clarke, M.A., M.D. Cantab., F.R.C.P. Lond., was appointed Pro-Vice-Chancellor of the University of Bristol.—The committee formed for the purpose of providing a hall of residence for the women students of the University of Bristol announce that, mainly owing to the generosity of two ladies unconnected with Bristol (one of these, besides making a large contribution, has guaranteed a sum of £2000), they have been enabled, with the aid of a grant from the University, to purchase Clifton Hill House for their purpose. The necessary alterations are now being made, so that students may be received at the beginning of next term in October. A further appeal for contributions will be made in the autumn to enable the committee to complete the equipment of the hall, to repay the guarantee, and to fulfil their promise to the University to maintain the hall for a period of two years from next October. The treasurer of the fund is Mr. Hugo Mallet of Goldney House, Clifton.—The men lecturers' committee has just issued a report of the past term's work. This report, which refers to no less than 17 separate undertakings, contains many things already alluded to in previous letters. Mention should, however, be made of one or two points. Very full recommendations as to academic costume are included; these have been drawn up after a commendably [illegible] in use at the various [illegible] sermons, the com- [illegible] of three sermons to [illegible] in the large hall of [illegible] udents' Handbook is to be prepared, and a scheme for the circulation of reprints is recommended as the best method of publishing the scientific research of the University in an official form. A specially appointed committee is collecting information relative to the foundation of a University settlement.

Bristol Museum.

On July 14th a new "Greville Smyth" room was opened in the museum by Lady Smyth, who has given the collections of insects made by her husband, the late Sir Greville Smyth, as well as £2000 for the furnishing of the room in which they are now housed. The Lord Mayor moved a vote of thanks to her for her "splendid and welcome gift to the museum," which was seconded by the [illegible] istol [illegible] that [illegible] hich the University will benefit by a ready access to this large collection of specimens.

Bristol School of Industry for the Blind.

Ever since 1793 Bristol has provided a school for its blind citizens. In 1803 the original small undertaking passed into larger premises; and in 1838 into the buildings which, occupied till now, will shortly pass into the hands of the University. The school is now to be transferred to much larger buildings at Southmead, on the northern boundary of the city. On July 12th the foundation-stone of these buildings was laid by Mr. Joseph Storrs Fry, after a short dedicatory service. The site includes 12¼ acres of land, and the premises in process of erection will provide a resident school and technical institution for 100 pupils. In addition, workshops for 100 men and women are to be provided in the city, with a shop for the sale of the goods made. A sum of between £25,000 and £30,000 is needed in addition to that realised by the sale of the old premises.

Bristol Port Sanitary District.

The medical officers of health of this district have issued their report for 1908. Ships arriving in the port during the year brought ten cases of enteric fever and four of dysentery but none of cholera or plague. A number of data as to the amount of food, including animals, imported into the port of Bristol during the year are given, and the regulations with regard to food inspection, made obligatory by recent legislation, are detailed. An account of such arrangements as already exist for food inspection follows, with recommendations that a port inspector of foods should be appointed to have the oversight of the food imports discharging at Avonmouth and the other docks, as well as of the slaughter-houses at Avonmouth.

July 27th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

SINCE the close of the summer term great headway has been made in the transference of the departments of physics and chemistry to the new buildings at Bournbrook, and the [illegible] are to give more room to [illegible] physiology, and materia [illegible] ised space for the pathological museum, are being rapidly pushed forward, so that everything may be in working order for the commencement of the winter session. It is rumoured that there will be keen competition for the Chair of Zoology, rendered vacant by the death of Professor Bridge, and it is expected that the appointment will be made in September.

The City Sanatorium.

The Salterly Grange Sanatorium was opened on Jan. 7th last, and it appears from the report of the health committee that the results gained during the intervening period are very promising. From Oct. 27th, 1908, to June 30th, 1909, Dr. J. Douglas Stanley, who was appointed to select suitable cases, examined 207 patients, of whom 157 were rejected and 50 were passed for treatment. Those rejected were either in too advanced a stage of phthisis or their family history and constitutional condition were so unsatisfactory that they were unlikely to benefit by the treatment. Forty-nine cases were received at the sanatorium, nine left for various reasons before the completion of their treatment, nine were discharged, and 31 patients were still in the sanatorium at the end of the half year. Of the nine discharged patients eight were apparently cured, and one showed no improvement. Dr. Stanley reports that he has not seen all the patients who have been under treatment, but those he has examined show very satisfactory results, some having lost all signs of phthisis and others being so much better that there is every hope that they will recover completely.

Tuberculosis and Milk-supply.

Whilst our health committee will welcome and take part in any national scheme for the eradication of tuberculosis amongst cows it proposes to act in advance of a general movement, and has under consideration a scheme which, with the approval of the council, it will put in operation in the ten-mile area around Birmingham. If the scheme is approved the dairymen within the area who send milk into the city, who have sanitary cowsheds, and who undertake to separate the healthy from the diseased animals and gradually dispose of the latter, will be provided with the necessary veterinary assistance for testing all their dairy cows. It is estimated that in the first year the scheme will cost £120, and that the cost will gradually increase to £300. By the expenditure of such comparatively small amounts the committee hopes to demonstrate that the dairy herds can be kept free from tuberculosis, and it also hopes that as the cow-keepers become familiar with the methods and see the good results, increasing numbers of them will fall in with the scheme and take the necessary steps to ensure success.

The Hospital Saturday Fund.

Unless the later indications prove to be incorrect, for the first time in its 37 years' history the Hospital Saturday Fund will not reach the level attained in the previous year. Last year 2084 contributors subscribed £20,163 7*s.* 6*d.* This year the number of contributors has fallen to 2045 and the total contributions, according to the last published statement, to £19,040 12*s.* 2*d.*, a decrease of somewhat over £1122. The result is disappointing, yet it is neither unexpected nor surprising, and considering the unsatisfactory state of trade we may be glad that the diminution is not greater. Yet as one passes along the streets one cannot help noticing that the crowds waiting to go into theatres and music halls are not appreciably diminished. Such crowds consist largely of the classes which make most use of the hospitals and it would appear that a little sacrifice of pleasure might have prevented the set back to the Fund which gives so much in return to those who still appear to have money to spend on less worthy objects.

The Health of Warwickshire.

Dr. A. Bostock Hill's annual report upon the health of Warwickshire is very hopeful in tone and certainly the results recorded must be admitted to be good as contrasted with those which existed in the past, if they are looked at purely from the point of view of a health officer. Ten years ago the population was 352,000 and it is now 400,000; during the same period the general death-rate has fallen from 15·93 per 1000 to 12·8 per 1000, and the infantile death-rate from 142 to 100 per 1000; consequently, as a result of the improving conditions an average of 487 lives per annum have been saved, calculating on the population of the middle period and the general death-rate. On the other hand, the birth-rate has fallen and last year it was only 25·7. Whilst the average death-rate is, on the whole, fairly satisfactory, it has been, and still remains, distinctly high in some districts, particularly in Bulkington, where it is 20 per 1000, and Dr. Hill suggests that an investigation should be made regarding the cause of this comparatively high rate.

July 27th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Health Congress at Leeds.

THE Health Congress held recently at Leeds has been reported at satisfactory length in the newspapers, more especially in the excellent journals of the great Yorkshire towns, and since the utility of such a congress largely depends upon the public attention which it receives the interest taken in its proceedings by the daily press cannot fail to have been of service to sanitary progress. On such an occasion any new *ex cathedrâ* pronouncements in hygienic science or preventive medicine can hardly be expected, and the Leeds meeting was not, in fact, particularly notable as a scientific conference, but it was of great value in bringing the medical men engaged in public health studies into contact with the rapidly increasing number of volunteer lieutenants and non-commissioned officers in the national sanitary army, and also with those public-spirited members of town councils and sanitary authorities who appreciate to the full their responsibilities in the health of their fellow citizens and are anxious to hear the studied opinions of experts for their future guidance. On the other hand, the experts themselves cannot fail to gain some profit from the views of such intelligent and philanthropic laymen as devote their time and money to the improvement of the public health, and more especially of those engaged in municipal administration who have the responsibility of spending the ratepayers money in the way most advantageous to their towns. The importance of such coöperation was recognised to the full by the organisers of the Congress, who devoted a section to representatives of municipalities, in which medical officers of health had the opportunity of meeting aldermen, bailies, councillors, engineers, and architects, all of whom were able to give their views in the course of such instructive discussions as arose out of the address by the Lord Mayor of Leeds (Alderman F. J. Kitson) on the sanitary evolution of that city. In this debate Mr. Percy Robinson made some trenchant remarks on town planning in relation to health, in the course of which he accused our nation of a lack of "that artistic spirit and civic pride which is so characteristic of our continental neighbours," and urged the formation of advisory committees of architects, artists, representatives of educational and other bodies to assist municipal authorities in the development and rebuilding of city areas. Mr. F. E. Fremantle, medical officer of health of Hertfordshire, followed this paper with an account of Letchworth Garden City in relation to the Town Planning Bill, in the course of which he uttered a strong protest on the detrimental effect which the present Finance Bill must have on the development of the city. Another section to which particular attention was directed was that devoted to child study, in which the health-workers and home-visitors gave free expression to their experiences. The topic which lies at the root of the public health of the next generation was not confined to this section, but occupied the attention of a plenary meeting of the Congress, which Dr. George Newman, medical officer to the Board of Education, addressed on Child Mortality in Relation to the Health of the State, dwelling particularly on the ill-effects suffered by infants as a consequence of the bad health of their mothers. Dr. Newman considers that all future effective preventive medicine must start with the home and "must deal more with the home than the house," but that the State must do its work by educating parents and not relieving them of their responsibility in their children. He cannot see in compulsory military service a panacea against physical degeneration, for it affects neither the boy, the man who is organically unfit for service, nor the woman, the factor on which the health of the race most depends. "The true and radical method of physical improvement," said Dr. Newman, "is to lay the foundations deeply and broadly upon healthy childhood. ...... By these means we shall, to use Pasteur's noble words, extend the frontiers of life." A discussion that produced some vigorous expressions of opinion was on the training of girls in the duties of motherhood, which Colonel Harding, the President of the Congress, took to be the main object of a woman's education. One speaker seemed to trust the mother's "instinct" to do what is right for her baby without being taught, but others, notably Alderman Broadbent of Huddersfield fame, strongly advocated the practical teaching of girls in the proper methods of caring for live babies, and he expressed thorough disgust with those teachers who are content to set schoolgirls to wash rubber dolls. Mrs. Scharlieb, M.D., contributed a useful plea to this discussion, in which she showed her appreciation of the unstable psychology of many adolescent girls, especially with regard to their romantic friendships, and urged that "the conspiracy of silence amongst school teachers and parents should be ended and boys and girls taught to realise their responsibilities." Another notable paper was Dr. Arthur Newsholme's address to the section of preventive medicine on the subject of communal action against tuberculosis, in the course of which he rebuked those municipalities which "built extravagant town-halls whilst the water-supply of the town remains impure, or provides Turkish baths, as in some towns in Yorkshire, whilst back-yards and streets remain unpaved."

Death of the General Manager of the Infirmary.

The announcement of the sudden death of Mr. T. Blair, the general manager of the infirmary, will be received with great regret by a very large number of medical men, and many generations of former residents will be reminded by the announcement of a genial and courteous officer and of one who always held a high place in their respect and esteem. The following motion, proposed by Mr. Charles Lupton, was carried at the weekly board meeting of the infirmary:—

> The weekly board of the General Infirmary at Leeds desires to record its sense of the great loss which the infirmary has sustained in the death of Mr. Blair, who has held the responsible post of general manager of the institution since March 21st, 1876. Coming as he did when the infirmary was doing less than half the work which it now carries on, he has watched its growth with the utmost interest, and has himself been one of the chief factors in the large measure of success which has been obtained. Ever vigilant in watching expense, and earnest in increasing the efficiency of the institution, his genial manners and personal courtesy have rendered him a valued friend of the members of the weekly board and honorary and resident staff, and have earned the gratitude of the patients with whom he has had to deal. The board desires to express its deep sympathy with Mrs. Blair and the family in their bereavement.

July 27th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Home for Epileptics at Maghull: the Treatment of Epilepsy.

THE annual meeting in connexion with the Home for Epileptics, Maghull, was held on July 17th, at the institution, in the presence of a large gathering, over which the Lord Mayor of Liverpool presided. The report stated that the record of the year 1908 was one of rapid progress, the increase in the number of inmates being no less than 46, owing to the additional accommodation afforded by the new Chilton home for children. There remained in the institution on Dec. 31st, 1908, 259 patients, classified as follows: First-class, 10 males and 2 females—12; second-class, 29 males and 24 females—53; third-class, 103 males and 91 females—194. The admission of the large number of children which the Chilton home would accommodate—at least 40 boys and 30 girls—greatly added to the responsibilities of the management. Not only had regular school teaching, approved by the Board of Education, to be carried on, but in the case of these patients, even more than in that of ordinary children, it was necessary to give at least elementary industrial training. As time went on the question would arise as to what is to be done with them on reaching the age of 16 years. In cases where they were paid for by their friends or by boards of guardians, no doubt they would be allowed to remain in the institution. In other cases this might not be possible, and they would return to ordinary life without such a preparation as the home might give them if a few years longer could be spent under its treatment and training. This was an important question to be considered by public authorities.

The Royal Commission on the Care and Control of the Feeble-minded went so far as to recommend in its report that persons who could not take a part in the struggle for life, owing to mental deficiency, should be afforded by the State such special protection as might be suited to their needs, and that this protection should be continued as long as was necessary for their good, in their own interest and in that of the community. This would apply to a considerable proportion of epileptic persons, and the needful care and [illegible] than during [illegible] nent of those [illegible] years during [illegible] onfirmed the [illegible] with medical treatment adapted to the individual patient and suitable nursing when required, but still more with the continuous supervision of trained nurses and attendants, the most important factor was occupation and the exercise of mind and body which it brought. No healthy person could remain idle with impunity without deterioration of mind and body. Still less could a person afflicted with epilepsy do so. Naturally sluggish as a rule, the patients require the stimulus of steady duties, which must be performed, and under such stimulus they almost invariably improve in mind and body. In all departments where there were continuous duties involving responsibility a certain number of paid offices had been created for the purpose of giving encouragement to those holding them. In this way a sum of £94 odd was paid to patients engaged on the farm and nearly £68 to those engaged on certain general work, altogether reaching over £162. Although the rate of remuneration was necessarily small the good result was manifest, as the system had the effect of stimulating all the patients through the general desire which exists to qualify by steady work for the status of a paid worker. Owing to the crippled state of the finances the current demands for necessary additions and extensions had made the liquidation of the £2842 due on the children's home an impossibility. This is much to be regretted. The Lord Mayor alluded in complimentary terms to the management of the home and [illegible] the treatment of the inmates. [illegible] supporting the adoption of the [illegible] ing with epileptics at Maghull had been copied in London. The fact that epilepsy caused insanity was a point of view of great importance, and their object was to prevent mental deterioration, if they possibly could, by taking the children at an early stage and placing them under the most favourable conditions possible. He ventured to assert that many of those demented epileptics would not have been in the condition they were if they had been treated early in a colony [illegible] Rhodes (Manchester), [illegible] tee, said that in the [illegible] r individuality more [illegible] and whether it was epilepsy or insanity the colony system, such as existed at Maghull, was the right style to build upon. By providing such places a splendid work was being done in training patients to be as useful as possible. He asserted that from 15 to 20 per cent. of the prisoners in the gaols to-day were either epileptics or mentally deficient. It was cheaper to maintain them in colonies than in gaols.

Infectious Diseases in Liverpool.

At a meeting of the port sanitary and hospitals committee of the city council held on July 22nd the medical officer of health reported that during the two weeks ending July 21st the number of cases of infectious disease reported and the number removed to hospital were as follows: scarlet fever 114, removed 80; diphtheria 35, removed 21; typhoid fever 8, removed 8; measles 65, removed 31; totals, 222 and 140. The total cases in the city infectious hospitals were as under: scarlet fever, 509; diphtheria, 73; typhoid fever, 21; phthisis, 51; measles, 101; isolation cases, 78; total, 833. The experience in Liverpool, as in other large towns, is that, simultaneously with the closing of the schools for the holidays, infectious disease begins to decline. For the last three months scarlet fever has been very prevalent in the city, but this week's statistics show that the fresh cases reported had fallen to 52. A month or six weeks ago the new notifications averaged over 100 a week. At the present time there are 509 scarlet fever cases in the infectious hospitals, which is a considerably decreased total. Over 700 had been in hospital for some weeks, amounting to less than 1 per 1000 of the population. It would thus appear that the school is the chief agent in the spread of that disease.

Liverpool Convalescent Institution at Woolton.

The thirty-fifth annual meeting of the Liverpool Convalescent Institution was held on July 10th. The Lord Mayor was in the chair, and amongst those present were the Bishop of Liverpool and Mrs. Chavasse and Sir William H. Tate. The report was very satisfactory. This magnificent resort for jaded and weakly persons renders a service of immeasurable value to the city in enabling enfeebled bread-winners of working-class families to be restored to health and vigour. The Bishop remarked with his usual vigour on the benefits and the picturesque surroundings of the home, and described it as a paradise outside and a palace of delight within.

Payments for Maintenance in the City Infectious Hospitals.

The port sanitary and hospitals committee, after due deliberation, is unable to recommend that a charge be made for patients taken to the corporation infectious hospitals. An exhaustive inquiry into the matter has convinced the committee of its impracticability, because a residence is not always a clue to the occupant's means, because patients or their friends claim the right of the use of the hospitals as ratepayers, and because inquiries, unless very carefully conducted, "tended to obstruct the objects of the committee in effecting the isolation of the sick." Other large cities have had a similar experience, and have abandoned the idea owing to the difficulties in collecting payment.

The Liverpool Dispensaries.

The committee of the [illegible] being obliged to rebuild the premises in [illegible] at an estimated cost of [illegible] William Hartley a cheque for [illegible] towards the cost [illegible] promise of £500 from [illegible] at the end of Aug [illegible] of the Liverpool [illegible] the Liverpool working class.

July 27th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The Departure of Sir Isambard Owen.

THE appointment of Sir Isambard Owen to the Vice-Chancellorship of the Bristol University has been notified. This means that the distinguished Principal of the Armstrong College (formerly the Durham College of Science) of Durham University will resign the position which he has held here since 1904. It may be remembered that Sir Isambard Owen gave up the actual practice of medicine in London, where he was physician to, and lecturer in medicine at, St. George's Hospital, to turn his complete attention to educational matters, in which he has always interested himself. He has been Deputy-Chancellor of the University of Wales since 1895. Latterly, apart from his actual superintendence of the affairs of Armstrong College, he has been energetic in connexion with the University of Durham Bill. His departure will be regretted exceedingly in Newcastle-upon-Tyne, where he has made many friends by reason of his geniality and extreme earnestness, and it is greatly to be hoped that his new appointment will not mean the withdrawal of his valuable opinion and advice concerning things educational in the north of England.

Feeding of Dairy Cows.

The Durham county council education committee has issued a report containing the results of experiments carried out at Offerton, Durham, by Mr. S. H. Collins, M.Sc., of Armstrong College, and by Mr. F. P. Walker, B.Sc. The experiments, which were conducted during the summers of 1907 and 1908 and the winter of 1907, were directed to two ends: firstly, to determine the result on the milk of feeding with brewers' grains; and secondly, to show what possibility there might be of the transference of boric acid from the food of cattle to their milk. As regards the first the conclusions drawn are: 1. That a moderate amount (20 pounds) of brewers' grains per day increases, for a certain time at any rate, the yield of milk, and that this period of increase has its limit. A corollary of this is that the practice of changing the diet of the animals is a good one. 2. There is no appreciable diminution of the fats under the diet, that is, as to the daily yield, but the fat of the morning yield is lowered more frequently. 3. No change was noted in the non-fatty solids. 4. There was no notable change in the live-weight of the cattle. It must be remembered that these results were obtained when the grains were used in moderate quantities only, with good additional artificial food-stuffs. As regards the conclusions under (2)—the lowering of the morning fat—this would mean that brewers' grains are not to be recommended, especially when the 3 per cent. standard is also taken into consideration, but for ordinary dairy cows it would appear that such grains may safely be used, the stock being otherwise well fed. The second group of experiments is also interesting, the point of these being to answer the question, "Can boric acid get into milk as the result of feeding cows on food containing boric acid?" These investigators state that it can, but they add that the amount is so small as to be negligible from the point of view of its preservative properties. If the milk contain more than 0·1 per cent. of the acid this last has probably been added. If present in less quantity than 0·01 per cent. the food of the cow may be responsible. Between these two limits is uncertainty as to its origin, but inasmuch as 0·25 per cent. boric acid is needed to keep milk sweet there should be no doubt as to whether the acid is derived from the food or has been added to the milk. The experimenters state that, using small quantities of boric acid in the food, one-sixtieth part reaches the milk. They further add some observations which raise the old difficulty of dealing with milk samples—viz., how long may milk stand at rest without making the part withdrawn differ markedly from the bulk? A large vessel with a tap at the bottom was used and samples taken from the top of the vessel and from the tap at various times. They concluded that in fairly high temperatures the samples obtained after only a few minutes' rest are useless as representing the bulk; with lower temperatures the error is not so great.

Durham University.

A convocation for the purpose of conferring degrees was held at the Durham University College of Medicine in Newcastle-upon-Tyne on July 24th. The degrees were conferred by the Sub-Warden, Professor F. B. Jevons. The majority of the degrees conferred were medical, and the recipients were the successful candidates from the recent summer examinations held in the University. The candidates were presented by Sir George Hare Philipson (President of the College) and by Professor F. Page.

July 26th.

SCOTLAND.

(From our own Correspondents.)

The Chair of Surgery in the University of Edinburgh.

As was intimated in The Lancet last week Mr. Henry Alexis Thomson was selected by the Board of Curators to fill the Chair of Surgery vacated by Professor J. Chiene. Mr. Thomson graduated at Edinburgh in 1885; four years later he took the degree of M.D., obtaining a gold medal for his thesis on "Tuberculosis of the Bones and Joints." He has from the outset of his career devoted himself to surgery and at the time of his appointment to the Chair of Surgery held the post of surgeon to the Deaconess Hospital and assistant surgeon to the Royal Infirmary. He has made many valuable contributions to the literature of surgery, but the work which has made his name most widely known is the "Manual of Surgery," which he published in conjunction with his colleague, Mr. Alexander Miles. This work is used largely in the British and American schools and has reached a third edition. Mr. Thomson has been a teacher and a lecturer to students almost from the time he graduated and has for years been an examiner in surgery, while his application was supported by testimonials from well-known surgeons in Britain, America, and on the Continent, who bore witness to the excellence of his surgical work and to the place he held in the estimation of his surgical *confrères* throughout the world. Mr. Thomson is 45 years of age, and has thus the prospect of many years of work before him, and the opportunity of not only upholding, but of adding to, the honour and dignity of the chair he has been selected to occupy.

University of Edinburgh: Medical Graduation Ceremonial.

The medical graduation ceremonial in the University of Edinburgh was held on July 23rd, the chair being occupied by the Vice-Chancellor, Principal Sir William Turner, K.C.B. While the ceremonial at this date is mainly given over to graduation in medicine it is not confined to this, and considerable additional interest was added to the proceedings by the presence and the conferring of the degree of LL.D. on the Right Hon. George Wyndham, M.P., the Lord Rector of the University. This honorary degree was also conferred on Madame Curie *in absentiâ*. After these had been conferred the Dean of the Faculty of Medicine presented 59 men and five women for the degree of M.D. Seven of the men received gold medals for their theses and one of the women got "highly commended." The degree of Master of Surgery was conferred on two men. Thereafter 93 men and 10 women were presented for the degree of M.B., Ch B. The Ettles Scholarship was awarded to Mr. Robert Coltart Harkness as the best graduate of the year, while the Dorothy Gilfillan Memorial Prize was awarded to Miss Mary Muter Gardner as the best woman graduate. The graduates were addressed by Sir Thomas Fraser, the Promoter, who mentioned that that was the third occasion on which he had addressed the graduates, and that now not one of those remained who constituted the Faculty of Medicine when he first joined it. He referred to the losses the faculty had experienced recently by the death of Professor D. J. Cunningham and the resignation of Professor J. Chiene. He then referred to the advances which had been made in the University during the past 15 years in the encouragement of original research, and said that now higher education by research had established for itself a firm position in their university system its further development might be regarded as assured. Instead of a university being regarded merely as an institution for imparting acquired knowledge, and at which the growth and extension of knowledge were ignored, so remarkable had been the appreciation of the value of scientific research in this country that there were now institutions whose sole function was original investigation. Among the first of these to be instituted were the research laboratories of the Royal College of Physicians, Edinburgh. For the university the ideal was the appropriate combination of both purposes. He referred to the need of new special courses being established, as had been done in public health. Whatever might be the future work of those before him they would recognise that research and advanced study in special departments of medicine merely constituted two of the methods by which the power of observation and judgment might be trained and the mind taught to appreciate truth and to strive to obtain it. Luncheon was afterwards given in the University Union in honour of the honorary graduate, Mr. Wyndham.

July 27th.

IRELAND.

(From our own Correspondents.)

Tuberculosis Prevention (Ireland) Act: Dublin County Council.

At the adjourned quarterly meeting of the Dublin county council, which was held on July 22nd, a communication was submitted from the Kingstown urban district council stating that it had decided to adopt Part I. of the Tuberculosis Prevention (Ireland) Act, 1908, subject to the approval of the county council, and applying for the necessary approval. The provisions of the Act were explained by the solicitor to the council, who pointed out that any sanitary authority could adopt the Act, but that the adoption was subject to the approval of the county council. A considerable amount of discussion followed, and had the effect of eliciting the principal arguments which have from time to time been advanced both for and against the working of the Act's most important clauses. One member expressed the opinion that the meaning of the Act was that people who should be pronounced to have this disease would be banished from society and from their friends for ever. The chairman pointed out that such persons were removed to the most suitable surroundings that science could devise to improve their condition, while in addition to the enormous advantage to the sufferer the public at large were saved from the possibility of infection by contact. Another speaker asked whether any remuneration was provided for the rest of a family in case the bread-winner was pronounced to be a victim of tuberculosis. If there was not, he would be very slow to "put him away." One of the speakers stated emphatically that if the people of Kingstown had been consulted the adoption of the Act would have been opposed by fully 90 per cent. The matter had come on them as a surprise. The secretary of the council then read a resolution which had been forwarded by the Kingstown Municipal Reform Association expressing disapproval of the adoption of Part I. of the Act, and requesting the county council not to sanction it on the grounds that, if enforced, "it would be injurious to the interests of Kingstown as a health resort, and would inflict serious injury on the poor." In the course of the subsequent part of the discussion it was observed that in a chronic case a house would have to be disinfected every week, and the result would be to have the inhabitants branded at once as lepers—and for life. The feeling of the meeting was demonstrated by the decision to postpone the consideration of the matter for 12 months. The discussion and resulting decision are highly instructive with regard to the present state of opinion on the subject in Ireland.

Belfast Lunatic Asylum.

Dr. William Graham, medical superintendent of the Belfast District Lunatic Asylum, has issued his annual report for the year ended March 31st, 1909. Financial tables for the year ended March, 1909, are appended. There were 266 admissions—the same as for 1904—or about the average of the past five years. Among the asylum constituency there are three classes which should not, as a rule, be treated in a hospital for mental diseases. These are the alcoholics, epileptics, and the criminal insane. The first should be, Dr. Graham advises, sent to an inebriate home; the second ought to be treated in colonies; and the third by their presence interfere with the true ideal of a hospital, as they tend to deepen the stigma which despite everything is still attached to asylum life by the popular mind. Having dealt most exhaustively with the causes and treatment of insanity, Dr. Graham gives the history of the year, during which 82 patients recovered and 37 were discharged as relieved. The ratio of recoveries to the total number of admissions was 30·8 per cent. There were no deaths from accident or suicide. The most notable event of the 12 months was the acceptance of tenders for carrying out the villa colony buildings at Purdysburn, the works of which are now in progress. Appended to the report is a most satisfactory memorandum of inspection in December, 1908, by the Government inspector, Dr. E. M. Courtenay.

Belfast and the Tuberculosis Prevention (Ireland) Act.

The public health committee of Belfast has decided to postpone for a time the question of the adoption or not of the Act. A very strong memorial from the Belfast Branch of the Women's National Health Association of Ireland has been presented to the public health committee urging the adoption of the measure.

July 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Relationship of Variola and Vaccinia.

THE question whether variola and vaccinia are or are not modifications of the same pathological process is an important point upon which medical opinion is divided. Inoculation of the human subject with bovine vaccinia is a protection against variola, but does the converse hold good—that is, does inoculation of a cow with human variola protect it against an attack of vaccinia? It appears that the views of the German observers on this subject are diametrically opposed to those held by the French, but M. Kelsch and his scientific fellow-workers have recently suggested an explanation of this singular divergence. The explanation is to the effect that the French experiments have been made with great care, precautions being taken to isolate the animals after inoculation, but the Germans leave them in the cow-houses of the vaccination stations where the proximity of cows already inoculated with vaccinia suffices to bring about contagion. It is therefore not variola which they transmit in this way; it is vaccinia which manifests itself by air-borne contagion. In order to prove this M. Kelsch inoculated three heifers *à blano*—i e., with glycerine only; they were left in the general cow-house and between the sixth and seventh days characteristic vaccinia pustules appeared at the points of inoculation. Now if variola had been inoculated in place of glycerine a success would inevitably have been registered to the credit of the German opinion.

Vaginal Hysterectomy.

At a recent meeting of the Society of Paris Surgeons M. Brochin called attention to the importance which his teacher, the late Professor Péan, attached to vaginal hysterectomy, and he expressed regret that this operation had now fallen into disuse. Professor Péan employed it in the removal of fibromata even when of considerable size, in bilateral inflammations of the adnexa, in metro-salpingitis, in pelvic suppurations, in cancer of the cervix, and in prolapse of the uterus occurring subsequently to the menopause. For small fibromata in particular vaginal hysterectomy was an excellent operation, exposing the patient to the least possible danger; and even in cases of bilateral inflammations of the adnexa, pelvic suppurations, circumscribed cancer of the cervix, and uterine prolapse the operation might be of the greatest value in expert hands. M. Péraire declared himself to be of a different opinion and maintained that there was good reason for this method of hysterectomy being almost completely abandoned in France. With this operation it was not possible to form an opinion as to the state of the lesions, and several dangers were associated with it, such as probability of débris being left behind and the bladder being wounded, infection of the peritoneum, compression of the ureters and intestine, and hæmorrhage. He did not think that vaginal hysterectomy was advisable in either fibroma or cancer or prolapse of the uterus or in pelvic suppuration. In prolapse of the uterus hysteropexy was sufficient, and in the other conditions above mentioned, abdominal hysterectomy was to be preferred, now that successive improvements in the mode of performing the latter operation have rendered it comparatively safe. M. Paul Delbet took the side of M. Brochin, considering vaginal hysterectomy to be an excellent operation in some circumstances. In cases of cancer vaginal hysterectomy was, in his opinion, only a palliative; complete abdominal hysterectomy was the proper treatment, and 12 such operations performed by him had been successful. Vaginal hysterectomy produced less shock and was a suitable procedure in pelvic inflammations which were neither cold nor diffuse (*non refroidies ou mal limitées*), as well as in fibromata not rising more than four fingers' breadth above the pubis and not having too great a transverse diameter.

Legislation Relative to the Use of White Lead.

Both the Senate and the Chamber of Deputies have now passed the Bill regulating the use of white lead until such time as the use of this substance by painters will be entirely prohibited. In workshops, shipbuilding yards, houses in course of construction or repair, and generally in every place where painters are at work, the heads of firms, directors, and managers are bound, independently of the measures prescribed for the health and protection of the workmen, to conform to the new ordinance. At the end of the fifth year following the promulgation of the present law the employment of white lead, of linseed oil containing white lead, or of any special product into which white lead enters will be prohibited in work of any kind whatsoever done by men engaged in the painting trade, whether inside or outside buildings. A regulation of the public authorities, drawn up in accordance with the advice (1) of the consulting committee of arts and manufactures, and (2) of the commission of industrial hygiene will be required for the performance of any special work for which relaxation of the provisions of this law may be required. The inspectors of factories and workshops have instructions to see that the law is enforced, and for this purpose they may enter any of the places mentioned above, with the reservation that if the places in question are habitations (*locaux habités*) the inspectors must previously obtain the permission of the occupants. The new law will be promulgated before the end of the present year. The prohibition of the use of white lead will, therefore, not come into force until Jan. 1st, 1915.

Treatment of Hydatid Cysts of the Spleen.

At a meeting of the Surgical Society held on July 7th several members described the results obtained by them in the treatment of hydatid cysts of the spleen. One of the patients was a man, 52 years of age, under the care of M. Bazy, who approached the tumour by an incision parallel to the external border of the rectus muscle, punctured the cyst, and applied formol to the cavity with subsequent drainage; this was followed by an uneventful recovery. M. Potherat said that in these cases he was generally in favour of splenectomy, which did not appear to him to be objectionable as the gland was already diseased. M. Ricard said that he had operated on a boy six or seven years of age who suffered from an enormous hydatid cyst of the spleen—so large, in fact, that it was supposed to be a hydatid cyst of the liver. The spleen was of normal appearance, but formed a kind of cap to the cyst. In this instance the idea of splenectomy did not occur to him; he reduced the spleen and "marsupialised" the cyst. A second operation had to be performed on account of a hernia consecutive to the marsupialisation. The ultimate result was excellent.

The Academy of Medicine.

A decree has just been issued authorising the Academy of Medicine to accept a bequest of 25,000 francs, the income of which accumulated for three years will serve to found a perpetual triennial prize. This will be called the Potain prize, and will be awarded to the best work on clinical medicine which has appeared during each triennial period.

July 27th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Parliament and Public Health.

AMID the "sound and fury" of the debates that turned the Chamber of Deputies into a bear-garden in the last weeks of the session the "still small voice" of science was occasionally heard in the interests of public health and in vindication of legislative comity. Dr. Gaetano Pieraccini of Florence, for one of whose constituencies he sits as an advanced Liberal and in whose medical school he fills with credit the post of privat-docent in "patologia medicale," put some searching inquiries to the Minister of Agriculture, Industry, and Commerce on the protection of the labourer and the working-man in the discharge of his *métier*—inquiries prompted by the findings of the recent Congress on the maladies incurred in city factories and inland mines. He pointed out that ankylostomiasis—an eminently contagious parasitic disease—has recently assumed a novel development, the germs of which have been imported from America by Italian emigrants returning to their native land. The "lavoratore della terra," already scourged by pellagra and malaria, can ill afford this third perquisition levied on his vitality and strength, and the dictates of economy, as well as humanity, call loudly for his protection from the said pathological exaction, while such indemnity should be assured him as will enable him to meet the expenses of prophylaxis and cure. His Excellency Signor Cocco-Ortu, the Minister above referred to, replied that special studies in the new malady were in progress by a commission under his department and that the prophylaxis urged by Dr. Pieraccini was being considered by the Direzione Generale della Sanità Pubblica, which took its orders from the Minister of the Interior. The "Circumlocution Office," it will be seen, is not unknown in Italy, but let us hope that the persistence and scientific strategy of such sanitary reformers as Dr. Pieraccini will ere long succeed.

The State Provision of Quinine against Malaria.

At a previous sitting Dr. Angelo Celli, another representative of the medical interest in Parliament, and also known and esteemed as professor of hygiene in the Roman school, invited the Government to add to its supply of quinine in the malaria-haunted districts a special preparation for the use of children of tender years, thousands of whom, he showed, fall victims to the disease. Congratulating himself on the augmentation of the money grant to the Red Cross in its anti-malaria crusade, and urging the still further facilitation of the exhibition of the drug, Dr. Celli elicited from Signor La Cava, the Minister appealed to, the reassuring announcement that the grant has this year been augmented by 30,000 lire (£1200). As too often occurs in the administration of money grants, the deflection of a State subsidy to extraneous uses is (Dr. Celli was sorry to show) not unknown in the malarious districts, and steps are, on his initiative, to be taken to secure the bestowal of the money on none but the parties for whom it is intended. This malversation notwithstanding, the disease is in continuous diminution—a result which, Dr. Celli thinks, will be still further in evidence when, to the preparations of quinine already in use, the tannate is added—a form of the drug which is by far the most easily digested, while it has none of the adventitious disadvantages of those combinations of arsenic and iron in which it is too often exhibited.

Births, Deaths, and Marriages.

The number of infants born alive in 1907 (the last statistical year) was 1,062,233; or 31·45 per 1000 of the inhabitants, a figure rather below that of the two years preceding. The greatest number of births was in January (100,491), the smallest in December (80,346). The number of male children exceeded that of the female—545,994 of the former to 516,339 of the latter—i.e., 1057 males for every 1000 females. The illegitimate births and foundlings amounted in all to 55,571, of whom 33,554 were recognised in the act of birth by at least one of the parents. The total of infants born dead in 1907 was 48,023. The multiple births were 12,963, the majority being in the Emilia, the Marches, in the Venetian territory, and in Latium. In 1907 there died in all Italy 700,333 individuals—i.e., 20·73 per 1000. In the great cities the mortality was somewhat higher than in the rest of the kingdom. The number of deaths is every year lower than that of the births, thus explaining the steady increase of the population. The influence of the seasons on mortality is heavy from December to March, diminishing thereafter to June, while accentuating itself in the two succeeding months of the summer and being mildest in the two succeeding months of the autumn. The deaths in 1907 were distributed in the proportion of 354,109 males to 346,224 females, or 102 of the former to 100 of the latter. Infantile mortality is in appreciable diminution, in keeping with the improved public hygiene. The marriages contracted in 1907 were 260,104—i.e., 7·70 per 1000 inhabitants. In 1906 the figures were 7·77 and in 1905 7·67. In the great communes the nuptial rite is usually rarer than in the country districts—the month most propitious to it being February with 29,770 marriages, and the least so being August with 14,430. The mean age of the couples in 1907 was, for the "celibi," that of 27 years 3 months; for the "vedovi" (widowers) 44 years; for the "nubili" (marriageable) 23 years and 9 months; and for the widows 41 years and 5 months. "Analfabetismo" (inability to read, write, or cypher) in married couples is diminishing. In 1907 the marriage lines were underwritten by 186,275 bridegrooms and 155,403 brides; not underwritten by 73,229 of the former and 104,701 of the latter. In 1872 the figures were the following: bridegrooms who underwrote the marriage lines, 88,589; those who could not, 113,772; and for the brides respectively, 50,017 and 152,344. Piedmont and Lombardy show fewest "analfabeti," the southern provinces most, principally in Reggio Calabria, Cosenza, and Catanzaro.

July 24th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Prevention of Accidents during Anæsthesia.

A DEPLORABLE misadventure happened recently in one of our large hospitals, a person who had applied for advice in the out-patient department dying under anæsthesia, which had been induced for a minor operation. This sad occurrence has caused the Home Secretary to issue an instruction to all boards of health and hospital boards, calling their attention to the necessity of laying down definite uniform rules for similar purposes, and as a consequence all medical men and medical corporations have received the following official communication: "In order to prevent accidents to patients during general anæsthesia the following points must be strictly adhered to. Nobody may give chloroform or any other anæsthetic to a person for the purpose of operation or exploration unaided, unless he is a fully-qualified medical man, having sufficient personal acquaintance with the required technique. If two or more practitioners are present at the anæsthesia one must be perfectly experienced in the work, and in that case another may administer the anæsthetic under the responsibility of the first mentioned individual. In hospitals where there is only one medical man another practitioner should be called in for the occasion. The conditions of the anæsthesia must be determined by the responsible individual. Special attention must be paid to the purity of the chemicals used, and an abundant supply of fresh air to the operating room is necessary. A patient must be detained in hospital after anæsthesia at least until all effects of the narcosis have passed away, and on leaving must be accompanied by a person who has been instructed how to take care of the patient in case anything unexpected occurs." In Austria accidents during anæsthesia are very rare. The out-patient departments in particular have hitherto been nearly entirely free from such occurrences. Here the "open-air method" is the one generally preferred, and general anæsthesia is resorted to only when absolutely necessary. The removal of tonsils or adenoids, extraction of teeth, paracentesis of the tympanum, operations on the nasal walls, and other minor operations are performed either without an anæsthetic or under only partial or local anæsthesia. Special care is taken to find out before operation whether the patient is liable to hæmophilia or suffers from the status thymicus. The researches of Dr. Paltauf of Vienna have done much to keep the Vienna surgeons aware of the latter possibility and to cause them to search for it in every case previously to the administration of an anæsthetic.

Historical Researches on Syphilis.

In a recent paper read before the Gesellschaft der Aerzte Dr. Kronfeld gave an account of his researches as to the origin and antiquity of syphilis. The belief is that syphilis made its appearance in Europe in 1493, when the sailors of Columbus returned from the discovery of America, and that the disease then spread like an epidemic over nearly the whole of Europe. Against this hypothesis must be placed the facts that the disease does not now show this pandemic character and that the writings c[illegible] contain passages which seem to [illegible] known in their time. It is certai[illegible] mercury were used in antiquity against certain ulcerative processes of the skin. Dr. Kronfeld has now found a Greek vase dating from the seventh or eighth century B.C., which shows very clearly a dark coloured woman, of negro type, presenting chronic serpiginous ulcerations on her arms and legs, attacked and slain by a Greek woman of unblemished purity of the skin. The ulcers might be due either to leprosy or to syphilis, [illegible] of the figure. [illegible] lesions must l[illegible] covery of America by Columbus. Again, the popular names of the disease in the various European countries exhibit the peculiarity that each nation ascribes the introduction of syphilis within its own area to its enemies. Thus the French call it *mal espagnol, mal anglais, mal indien;* the Spaniards call it *il mal francez;* the Germans also derive it from the French nation; in England "Spanish sickness" was once a familiar term; and the Turks call it "Christian illness." All over the world it is known, and everywhere the same remedies—namely, preparations of mercury, copper, and certain herbs—are used against it. There is no one country to which its origin can be attributed, and no age limit can be positively assigned to it. If vases and other objects of art are examined with this view perhaps more proof will be obtained that in earliest history syphilis was a source of much suffering.

Cerebro-spinal Meningitis in Austria.

The report of the Board of Health dealing with the epidemic of cerebro-spinal meningitis in Austria in 1906–1908 has just been published, and the following facts are worth mentioning. The disease appeared late in 1906 in the north-eastern part of the empire, and soon it was clear that its spread was very difficult to suppress. The cold and wet parts of the country were much more affected than the hot dry parts. The mountainous districts remained nearly immune. The number of cases in 1906 was 1506, with 853 deaths (56 per cent.); in 1907 it fell to 803 cases, with 461 deaths (58 per cent.); and last year it was 504 cases, with 263 deaths (53 per [illegible] there were 2823 notified cases, with 1577 [illegible] decline of the morbidity [illegible] not be brought down [illegible] of the attempts to immunise the "germ carriers" by pyocyanase. The sanguine hopes reposed on the latter substance have not been justified. In spite of repeated sprays and washes of the nose of the "germ carriers" with this liquid, cocci could be shown for weeks afterwards. The results obtained with the meningococcus serum, however, [illegible] proving that the universal adoption of this [illegible] has been urgen[illegible] An intraspinal [illegible] of the serum should be made at once in the lumbar region and if the symptoms do not abate within 24 hours the injection should be repeated. All persons coming in contact with patients should be kept under observation. A search for "germ carriers" and their isolation is the best prophylactic method, as they are the foci of infection more than the patients themselves. The use of the serum has reduced the mortality by 50 per cent., and this year not only is the morbidity very low (170 cases, with 48 deaths, in the empire) up to July 1st, but also the number of fatal cases is much smaller. Observations are going on as to the ultimate fate of those who survive. Already it may be stated that the worst effect of the disease is the loss of hearing, tending to deaf-mutism, as mostly children under ten years were affected, whilst motor disturbances are rare. The cause of the deafness is either panotitis or an inflammation of the labyrinth. Serious mental disturbances have also been noticed, especially in grown-up people, but happily only in very few inst[illegible] fection after an attack may be limited to th[illegible] by the patient; disinfection c[illegible] with as the germs are not able t[illegible] body.

July 26th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Early Diagnosis of Tuberculosis.

THE State Board of Health of Hungary has issued for distribution to the medical practitioners of the country a circular on the early recognition of tuberculosis, giving in a concise and systematic form all the information on the diagnosis of the disease to be obtained from a most exhaustive review of Hungarian and foreign medical literature. The increased attention directed to the prevention and treatment of pulmonary tuberculosis during the last few years has resulted in extensive scientific investigation, and the value of early diagnosis is shown both in prolonging the life of the patient and protecting those with whom he comes in contact. The medical men of the country are also reminded of the laboratories at the university and it is announced that examination of sputum of patients supposed to be tuberculous will be made without cost at any time. "Container stations" for the distribution of postal cases for the conveyance of specimens have been established, and wherever pulmonary tuberculosis is found to be exceptionally prevalent inspectors will be sent to assist in the investigation of the cause, and in taking the necessary steps to check the spread of the disease.

Food Preservatives and Food Adulteration

At the recent meeting of the Royal Society of Medicine partly to the close proximity of the building to the sectional meetings. In this week's issue we commence a detailed account of the more interesting articles exhibited.

Their Excellencies the Earl and Countess of Aberdeen have taken the occasion to show very thoroughly their appreciation of the work of the medical profession by their presence in Belfast during the week and their attendance at many of the functions of the Congress. Besides hearing the President's address they have been present at the opening discussion of the Section of Hygiene and Public Health on the notification of tuberculosis, a disease in the prevention of which their interest is common knowledge, the address in Medicine, the address in Surgery, the address in Midwifery, the annual dinner, and the receptions given by the Lord Mayor and by the members of the Ulster Branch of the Association. On the occasion of the address in Surgery Lady Aberdeen was elected an honorary member of the Association.

On Tuesday evening the large oval Assembly Hall of the Presbyterian Church was occupied by a large audience bright with doctors' robes, assembled to hear the Presidential Address. The presence of the Viceroy and his consort, and of the Lord Mayor of Belfast, gave a full official dignity to the occasion, which was opened by an interesting little ceremony, the investment of Sir William Whitla with the badge of office by Dr. Alexander Dempsey, who hailed the incoming president in words of warm fellowship. Thereon followed the presentation of the distinguished foreign guests and colonial delegates who were received with the customary plaudits, and then Mr. Edmund Owen, chairman of council, took the chair, whilst Sir William Whitla delivered his eloquent address on the History of the Belfast School of Medicine and the need for General Reform in Medical Education. A hearty vote of thanks to the President was proposed by Lord Aberdeen, who spoke in feeling terms of the work of the medical profession and who has been an honorary member of the Association since 1897. This was seconded by Sir Clifford Allbutt, and carried with acclamation.

There was no official church service held this year to inaugurate the meeting of the Association, but on Sunday the cathedral morning service was attended by the President-elect and many members of the Association, before whom the Lord Bishop of Down (the Right Rev. Dr. Crozier) preached an appropriate sermon from the texts, "Luke, the beloved physician," and "Only Luke is with me," in the course of which he commemorated the immortal services to mankind of Simpson, Lister, Jenner, and Pasteur. In the chief Presbyterian church the Rev. Dr. David Purves preached on Religion and Medicine, and uttered a measured warning against the modern intrusion of ministers of religion into the province of the physician.

The Association entertained a distinguished group of foreign guests, who took part in many of the sectional discussions. Professor Bordet of Brussels, who first described hæmolysins and has done so much to advance our conception of immunity, Professor Calmette of the Pasteur Institute of Lille, the inventor of the ophthalmo-tuberculin reaction, and Professor Sanfelice of Naples have contributed papers to, or otherwise assisted at, the Section of Hæmatology; Professor Fehling of Strassburg and Dr. C. Jacobs of Brussels at the Section of Obstetrics and Gynæcology; Professor Sonnenburg of Berlin at the Section of Surgery; Professor E. Fuchs of Vienna at the Section of Ophthalmology; Dr. Delavan of New York at the Section of Laryngology; Professor Richard Greef of Berlin and Dr. Delsaux of Brussels at the Section of Pharmacology; and Dr. Louis Wickham.

The delegates from colonial branches who had signified their intention of being present at the meeting were: Captain E. F. Gordon-Tucker, I.M.S., Bombay; Major N. P. O'G. Lalor, M.B., I.M.S., Burmah; Dr. R. Carter, British Guiana; Dr. H. G. Thomasz, Colombo and Ceylon; Dr. A. W. Dowding and Major H. A. L. Howell, Gibraltar; Dr. J. H. Sanders, Hong-Kong and China; Dr. A. V. M. Anderson, Dr. R. J. Bull, Dr. G. C. M. Mathison, and Dr. G. A. Syme, Melbourne and Victoria; Dr. J. Hyslop and Dr. D. C. Watt, Natal; Dr. W. E. Collins, Dr. A. W. Izard, Dr. J. H. E. Jarvis, Dr. H. J. M'Lean, Dr. C. G. F. Morice, and Dr. W. H. Unwin, New Zealand; Dr. M. Jay and Dr. M. J. Symons, South Australia; Surgeon-General P. H. Benson, South India and Madras; Dr. R. Arthur and Dr. O. Maher, Sydney and New South Wales; Dr. G. Michie, Transvaal; and Dr. Ashton, West Australia.

On Wednesday Professor William Osler, in his capacity of President of the newly formed Medical Library Association, delivered before the packed benches of the chemistry theatre an address on the Medical Library as a Factor in Post-graduate Work, in the course of which he indicated the wealth of medical literature stored in the provincial centres of the United Kingdom, and laid down some admirable rules for the systematic study of books and periodicals by medical practitioners. An interesting exhibit of old medical books was shown by this association during the week. We hope that its President's stimulating address has resulted in a considerable addition to its lists of members.

The housing of all the sections in reception-rooms under the roof of the University has been a great convenience to all concerned. The library has been the scene of the addresses in medicine, surgery, and obstetrics. The local secretaries are to be congratulated on the excellence of their arrangements, and we owe a special acknowledgment to Professor Letts for placing his private room at our disposal to serve as an office during the meeting.

We have also the pleasant duty of thanking the Editor of the *British Medical Journal* and the General Secretary of the British Medical Association for the ready courtesy with which they have placed every facility at our representatives' disposal.

We have no space this week to speak of the many interesting afternoon visits and excursions that were arranged for, and it is hardly necessary to say that wherever the members and guests of the Association were invited they met with the readiest of welcomes from their Irish hosts.

THE SECTIONS.

MEDICINE.

Wednesday, July 28th.

President, Professor **James Alexander Lindsay** (Belfast).

The **President** in his opening remarks gave a brief history of the growth of medical education in Belfast since the year 1820. He also indicated the necessity for the physician to reassert himself owing to the numerous invasions of his department.

Angina Pectoris.

Sir T. **Clifford Allbutt** (Cambridge) in opening the discussion affirmed that angina pectoris deserved in the fullest degree to be regarded as a disease by itself and not merely as a symptom or as a symptom group. After stating that he had been accustomed for some time to divide angina pectoris into angina minor and angina major, he proceeded to consider the symptoms separately. The chief symptom was the pain which arose at or under the manubrium sterni, and not, as is stated in the text-books, copying one another, in the præcordial region. In angina minor it was usually at the manubrium and down the middle third of the sternum. Another symptom was the association of vaso-motor phenomena and the imperious cessation of muscular movements, including even those of respiration. Another important feature was the apprehension of evil which was not necessarily the fear of impending death. The special features in angina minor were that the attack was evoked by muscular effort only, the arterial pressure was usually raised, the condition was nearly as common in women as in men, and there was not usually the fear of impending death. In angina minor the arterial pressure was not necessarily increased. The focus of the disease was so sensitive that even a little increase of pressure would serve to excite it. Angina major was a more terrible condition, but was fortunately less frequent. The pain was at or near the same area; it darted in well-known directions, especially to the arms, usually to the left, sometimes to both, rarely to the right alone. Sometimes it spread to the neck and occasionally it might start in the periphery. In this form the pain was far fiercer and plumbed the very depths of bodily anguish. This form was often fatal. Intermediate cases existed between the two types. Pseudo-angina he dismissed as pseudodiagnosis; it was a functional malady and any reference was out of place in the present discussion. In regard to the vaso-motor phenomena, they were incidents and did not partake of the actual nature of the disease. Sir Clifford Allbutt then proceeded to discuss destructively the various views offered as to the nature of angina pectoris. The first hypothesis regarded the condition as the outcry of a dilated ventricle under stresses, and was now practically abandoned. Dilatation was too common a circumstance to be considered in so uncommon a condition as angina. The second view tried to draw an analogy with intermittent claudication in the legs. This Sir Clifford Allbutt described as a pretty fancy, but he pointed out that in angina the heart does not stumble until it falls once for all. The third view referred the condition to cramp of the heart, but in opposition to this he pointed out that the rhythm was normal. The next hypothesis discussed was that of Sir Lauder Brunton and Dr. Samuel West, which was practically an alliance between two of the preceding views and was in effect that of a crampy dilatation. As opposing this view, Sir Clifford Allbutt maintained that the heart except in fatal cases continued to do its work with [illegible] next view was that of Dr. James [illegible] owing that the heart was intact as regards four of its fundamental qualities, thought it might be deficient in contractility, and regarded the pain as due to cramp of the muscles of the cage of the thorax. Sir Clifford Allbutt held, however, that this cessation of respiration was due to fear and was not a mechanical arrest. The next view was that of Dr. Francis Hare, who suggested the existence of a morbid tension in the mediastinum, which was to some extent an approximation to his own view. The view that the condition was due to inflammation of the cardiac plexus was negatived by the view which Sir Clifford Allbutt asserted, that this plexus was motor in function. The same objection applied to Dr. A. Morison's view which referred the condition to a lesion of the intra-cardiac ganglia. The next explanation discussed was the coronary hypothesis, so strongly advocated by Huchard and Romberg. The objection raised to this explanation was that it did not explain many, and indeed the most typical, of the cases, which did not go to autopsy but recovered completely. Again, coronary atheroma was common in old men, and it was now admitted that coronary embolism afforded no evidence to support this view. Passing from the destructive part of his remarks to the constructive, he propounded a theory, which he first published in part in 1894, but which has not received recognition except by Josué who has fully accepted it. He urged that a condition which not infrequently ended in recovery cannot have its seat in an irreparable damage. His own view was that the origin of angina pectoris was not in the heart but in the suprasigmoid portion of the aorta and its investments. In fatal cases the patient died from vagus inhibition, and death was not due to the lesion itself. This vagus effect might be perceived in attacks which did not end in death. Similar vagal inhibition causing sudden death occurred in operations about the root of the lung, in blows on the testicle, and in gallstone. The fear of death was probably some echo in consciousness of this vagus effect. He believed the suprasigmoid part of the aorta was peculiarly susceptible to changes of blood pressure and that the Pacinian bodies found in its investments were concerned. The morbid summation of stimuli resulting from a drag or pull on the investments of this part of the aorta was transmitted to the corresponding spinal segment or segments and referred to other parts.

In the subsequent discussion Sir LAUDER BRUNTON (London), Professor W. OSLER (Oxford), Dr. W. K. HUNTER, (Glasgow), Dr. W. GORDON (Exeter), and Dr. JOHN HADDON (Hawick) took part.

A paper was read by Dr. D. W. SAMWAYS (Mentone) on Misconceptions Concerning the Riviera, and another by Dr. W. GORDON (Exeter) on the Influence of Soil on Phthisis.

SURGERY.

WEDNESDAY, JULY 28TH.

President, Professor T. SINCLAIR (Belfast).

The PRESIDENT opened the section with a few introductory remarks on the surgery met with in Belfast; there was much casualty practice, as was only natural from the large number of industrial works, and the number of fractures was very great. Aneurysms were very rare, and, as connected with this, he mentioned that syphilis was not very prevalent. Gastric and duodenal ulcers were common, and tuberculosis affecting bones and joints was very frequent indeed.

Mr. B. G. A. MOYNIHAN (Leeds) then opened a discussion on

The Operative Treatment of Obstructive Jaundice and the Proper Selection of Cases.

He commenced by insisting on the extreme difficulty of the subject. With all our present knowledge of the subject, though the diagnosis was generally correct, yet cases occurred from time to time in which the diagnosis turned out to be utterly wrong. There could be no absolute certainty. The most essential point was that sufficient inquiry should be made into the case. There were three branches of inquiry. The first branch was that dealing with the clinical history, and this was the most important of all. The inquiry should specially be directed towards the elucidation of the earliest inaugural symptoms, and by the symptoms the cases of obstructive jaundice fell into two classes. In the first the jaundice was absolutely painless in onset, and it was rarely noticed first by the patient, for it appeared very slowly and deepened day by day, yet, though it came on so slowly, it never receded. Preceding the jaundice and accompanying it there were a general impairment of health and loss of appetite, till at length the patient was emaciated and utterly disliked all forms of food. In the second class of case the onset was nearly always painful, the pain coming first and the jaundice following. The pigmentation increased rapidly, but it was never so deep as in the first form. The tint, too, was different; in the first form it tended to be a deep green, but in the second form it was hardly ever green, but always some form of yellow and brown. The pigmentation ebbed and flowed, and the patient had from time to time attacks of elevation of temperature and attacks of pain. In the former class of case the cause of the obstruction was nearly always malignant disease, perhaps of the head of the pancreas or of the common duct. In the second class the cause was nearly always a stone, but occasionally it was due to the impaction of some other body such as a hydatid. The anamnesis was the most trustworthy of all the means of diagnosis at our disposal. The second branch of inquiry dealt with the physical signs. A well-known law was of great value, and the best form in which it might be stated was that "In cases of obstructive jaundice due to blocking of the common duct contraction of the gall-bladder shows that it is due to a stone." This law holds good in nine cases out of ten; sometimes the presence of two stones may upset it, for there may be a stone in the common duct causing the jaundice, and a second stone in the cystic duct causing distension of the gall-bladder. When ascites is associated with obstructive jaundice it is nearly always due to malignant disease. Mr. Moynihan quoted a case in which a single stone in the cystic duct pressed on both the common bile duct and the portal vein so as to cause jaundice and ascites. The third branch of inquiry is connected with the examination of the urine and fæces, and the researches of Dr. P. J. Cammidge have resulted in methods giving a very substantial help in diagnosis. All the means at the surgeon's disposal should be employed to make the diagnosis as certain as possible. To diminish the tendency to hæmorrhage calcium chloride is quite worthless, and Mr. Moynihan has given it up entirely. He has recently employed the injection of an alien serum, and he finds that it is of distinct service. He considers that it is not desirable to remove the gall-bladder in obstructive jaundice if it can possibly be retained.

Sir **THOMAS MYLES** (Dublin) expressed his agreement with the need of a careful and prolonged examination before operation, for the difficulties of diagnosis could hardly be exaggerated. He had a very small opinion of the law quoted, and he objected to laws being laid down in clinical matters. He had often found it very difficult even to diagnose the existence of a dilated gall-bladder, and the larger it was the more difficult its recognition. It was undesirable to remove the gall-bladder in most cases.

Mr. **E. STANMORE BISHOP** (Manchester) laid stress on the value of Murphy's method in the diagnosis of these cases. He had found calcium chloride useful in preventing hæmorrhage, but he gave it in large doses of 30 grains three times a day by the mouth and from 30 to 50 grains per rectum at the same time. He was much opposed to uniting the gall-bladder to the colon.

Mr. **W. I. DE C. WHEELER** (Dublin) urged the need of diagnosing these cases before the jaundice developed; if obscure symptoms, such as biliousness, were properly investigated the presence of gall-stones would be recognised much earlier. The Cammidge tests were difficult, and there were some simpler tests.

Mr. **C. P. CHILDE** (Southsea) considered that gall-stones should be diagnosed early and should be removed before symptoms develop; the mortality would be much less, for several dangerous results would be avoided.

Mr. **J. CRAWFORD RENTON** (Glasgow) stated that he gave calcium chloride as a routine. He looked forward to the X rays giving valuable information of the presence of gall-stones.

Mr. **A. B. MITCHELL** (Belfast) objected to the employment of an exploratory incision merely for diagnosis. He considered that calcium chloride should be used freely.

Dr. **SONNENBURG** (Berlin) mentioned a case in which jaundice appeared after an ordinary appendicectomy; later coma supervened and the patient died. At the necropsy it was found that acute yellow atrophy of the liver was present.

Mr. **W. McADAM ECCLES** (London) hoped for more help from X rays, which in one case had given a faint indication of malignant disease of the head of the pancreas. In malignant disease causing obstructive jaundice the intense itching may justify draining the gall-bladder. To use calcium chloride effectually it must be given very freely by the rectum.

Mr. **MOYNIHAN** briefly replied.

OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, JULY 28TH.

President, Dr. J. CAMPBELL (Belfast).

A discussion on

The Treatment of the Graver Forms of Puerperal Sepsis

was opened by Dr. **THOMAS WILSON** (Birmingham). The following is an abstract of his remarks, which commenced with a statement of the gravity of the disease. Puerperal fever has been made notifiable and there are the strongest possible reasons for provision by the community of effective means for its isolation, study, and treatment, as has already been done in certain other contagious diseases. The absence of such organised provision renders the investigation and study of the disease not only difficult, but incomplete and scrappy, and makes impossible a sufficiently extended practical trial of new and promising methods of treatment. Grave cases of puerperal fever that threaten the life and health of the patient usually arise in the first few days after delivery at term, or less commonly after abortion. At the onset it is impossible to tell whether we are at the beginning of a serious or even fatal illness, or are merely witnessing a mild and passsing toxæmia. So soon as the temperature rises to 102° F. treatment should be begun; delay at this time is the most fatal, as it is the most usual, error. The vulva, vagina, and cervix should be carefully cleansed, a specimen of the contents of the body of the uterus should be obtained for bacteriological examination, and the uterus should be freely irrigated with iodine solution. If this is not followed by marked improvement in the course of 12 hours, or if the temperature again rises, the cavity of the uterus should be explored and any coarse putrescible material removed; for this purpose digital evacuation appears to present solid advantages over the use of the curette; in either case, a copious douche is indicated both before and after the intervention, and an anæsthetic is frequently necessary. In the general treatment of the patient absolute rest in bed is required for a sufficient time; pain may be relieved by applications of heat or cold. Among drugs, the most useful are quinine in large doses; alcohol in moderate quantities carefully regulated and controlled by observations of the pulse, temperature, tongue, and skin; and strychnine in hypodermic injections where there is failure of the circulation. The use of antipyretics is not to be recommended, since fever appears to be a measure of the patient's general resistance. Only in very high fever does the increased temperature itself appear to do harm, and when the thermometer rises above 103° tepid sponging of the surface of the body appears to be useful. With regard to treatment directed against the invading organisms, certain substances appear to have some influence in neutralising the bacterial poisons. It has been claimed by some observers that in colloidal silver or collargol we have a specific for septic infections comparable to quinine in malaria, or mercury and iodide in syphilis. Dr. Wilson had made trial of the drug in a fair number of cases, but has been unable to satisfy himself that it has any definite influence over puerperal sepsis. There have been no ill effects, however, and it appears worthy of extended trial in suitable cases. Subcutaneous injections of normal saline solution and saline enemata are found useful in supporting a failing circulation, and in helping to carry off bacterial poisons and the waste products of the conflict by flushing the tissues. Anti-streptococcic serum has been of little or no use in the treatment of grave cases of puerperal infection. The employment of vaccines made from the organism that has actually invaded the patient's body has been recently recommended, and appears to promise more favourable results. Surgical intervention in various directions and with different objects has been widely employed. Puerperal infection is of infinite variety and imperfectly understood, and cases undergo sudden and unexpected turns, so that prognosis is doubtful and the result of any therapeutic method hard to estimate. In the worst cases the resistance of the body is rapidly overwhelmed and death in a few hours or days inevitable; the expectation of good from treatment of any kind is small. In cases of peritonitis the chance of saving the patient by a timely operation increases in proportion as the symptoms progress more gradually and as larger amounts of fluid collect and become shut off from the peritoneal cavity by adhesions. Large collections of pus should be treated by early and free evacuation and drainage in the most accessible direction. Radical operations on the uterus and its appendages have proved fatal, and should only be practised in certain definite cases, as for instance in sloughing myoma, suppuration in the wall of the uterus, certain cases of rupture, and of septic hour-glass contraction, in suppurating ovarian cysts and ruptured pyosalpinx. In other cases it is desirable to wait if possible for at least six to 12 months until the invading germs have died out or become attenuated, and the natural powers of recovery and repair have had a reasonable chance to complete their work. Where it is not possible to wait it is best to operate through the posterior vaginal fornix, not removing the appendages, but opening up any purulent foci in the appendages or their neighbourhood, and providing for adequate drainage. Hope for the future still centres round prevention, which may be reasonably expected in time to bring about the practical abolition of grave cases of puerperal infection.

In the subsequent discussion,

Professor **J. FEHLING** (Strassburg) said that the chief thing required was a better diagnosis of the different forms of [illegible] that they might change from one form to the other. They had never clearly separated sapræmia from septicæmia; in sapræmia or toxæmia operations were not required. Bacillus coli infection was sometimes a bad one. With reference to treatment, he had come to the conclusion that serum was useless and he had seen no good results from that or collargol. Vaccine therapy might be better, but their experience of it was too short. He had tried injections of 5,000,000 of streptococci in a cubic centimetre, this vaccine being prepared from the patient herself. He did not agree with Dr. Wilson about local investigations and did not examine the interior of the uterus during the first week. He had found good results from douching in infection by coli bacillus or saprophytes, but it was of no use in streptococcic infection, and curetting was dangerous in that condition. He would always open the abdomen in peritonitis and put in a tube, but he did not wash out the cavity. The most important advance in treatment would occur when they could better differentiate the different forms.

Professor **MURDOCH CAMERON** (Glasgow) said that he treated sapræmia in every case by swabbing out the uterus with a mixture of equal parts of camphor and carbolic acid. He did not use the curette.

Dr. **J. MUNRO KERR** (Glasgow) thought that the reason why results were better in hospital than in private practice was because more attention was paid to cleansing the vulva and vagina. As regards treatment of slighter forms, he thought that early exploration of the uterus was undesirable and would not do it unless there was evidence of retained débris or doubt about complete expulsion of placenta or membrane. He was opposed to curettting. In the graver forms he agreed with Professor Fehling that they could not diagnose the real gravity from bacteriological examination but could only decide on clinical grounds.

Dr. **E. HASTINGS TWEEDY** (Dublin) did not agree that sepsis was abolished in lying-in hospitals, and they must depend on morbidity and not entirely on mortality tables. He did not agree that the index of a severe case was a temperature of 102° F. He had known fatal cases with a lower temperature. He pleaded for a more extensive performance of the operation of opening the posterior fornix, followed by a gauze drain; it was a simple operation and could be performed with the patient in bed. Anæsthetics were always badly borne by these patients.

Dr. **HENRY JELLETT** (Dublin) had found that localised abscesses in Douglas's pouch were generally associated with secondary superadded infection by the bacillus coli from the rectum. He asked what were the indications for performing this operation laid down by Dr. Tweedy. Prior advised doing it in every case, but personally he would confine it to cases in which there was a swelling. He made a large opening, washed out with iodine, and plugged firmly with iodoform gauze. He used only the blunt curette.

Dr. **F. EDGE** (Birmingham) drew attention to the danger of introducing further germs into the uterus, in the slighter cases of sepsis, if the vagina and vulva were not disinfected. Before an intra-uterine examination was made; he used only saline for washing out. He advocated that arrangements should be made for the public supply of vaccine.

Dr. **ALFRED SMITH** (Dublin) thought that the diagnosis of thrombosis was extremely difficult. He placed much reliance on the leucocyte count and favoured operation if the latter was low.

Dr. **CUTHBERT LOCKYER** (London) said that his own treatment of the severer forms was to explore the uterine cavity with a gloved hand, and at the same time take a swab for bacteriological examination. He had given up curetting; at [illegible] put in an iodoform [illegible] coccus pyogenes he [illegible] polyvalent serum while a vaccine was prepared; the latter took 48 hours. In coöperation with Dr. Eastes this had been done, and a dose of 2,0[illegible] given but lat[illegible] being [illegible] same time he used intra-uterine douching. He would only open Douglas's pouch when there was a lump present.

Dr. **C. E. PURSLOW** (Birmingham) spoke of the difficulty of providing hospital accommodation for these cases, and thought that provision should be made by the municipalities for the treatment of the poorer cases in the fever hospitals.

Dr. **H. BECKETT-OVERY** (London) quoted the good results obtained by Dr. Knyvett Gordon in the Manchester Fever Hospital.

Dr. **WILSON**, in reply, said that bacteriologists were now confusing us by dividing up the varieties of streptococci, and we were not yet on sure ground as regards the division between hæmolytic and non-hæmolytic forms. As regards the division between slight and severe cases of septicæmia, he took the temperature as being the most convenient guide. He did not think it possible to tell whether the uterus was empty without exploration by the finger, and he would examine if no improvement followed in 12 hours after irrigating.

Dr. **J. J. AUSTIN** (Belfast) read a paper on

Midwifery in Private Practice: a Criticism of Methods based on Results.

465 consecutive cases were referred to. These included 29 abortio[illegible] presentations, one accidental hæmorrhage, [illegible]. There was no ma[illegible], forceps in multiparæ, 26 per cent. in primiparæ, and 8·7 per cent. in all cases. In primiparæ he found that 67 per cent. had perineal tears; these were all sutured at once with silkworm gut.

Dr. **CUTHBERT LOCKYER** then read a paper on the Treatment of Uterine Cancer in the Later Months of Pregnancy.

HYGIENE AND PUBLIC HEALTH.

WEDNESDAY, JULY 28TH.

President, Dr. **LOUIS C. PARKES** (London).

This section opened with a large attendance, which included the Lord Lieutenant of Ireland, the Countess of Aberdeen, and the Lord Mayor of Belfast.

[illegible] said that to [illegible] there was [illegible] urbanisa- [illegible] the towns [illegible] to several serious evils, the chief, perhaps, being the tendency to [illegible] the conditions which were presen[illegible] provements which had been effected by municipal authorities with respect to sewerage, household refuse, water-supplies, and the housing of the working classes. In respect of the air we breathed, towns were still, he said, far behind the country, and as illustrating the conditions under which a large proportion of the factory population worked he referred to the Report of the Departmental Committee of the Home Office on Ventilation, where it was suggested that the standard for CO_2 in the air should be 12 parts per 10,000, involving an air-supply of 750 cubic feet per head per hour, as against the ideal 3000 cubic feet required by de Chaumont. He then referred to the question of the pollution of the air by [illegible] adoption of gas by the working classes [illegible] in-the-slot system, and by the greater recourse to central heating (hot water and steam) for all kinds of large buildings. He pointed out, however, the urgent necessity for having an adequate system of [illegible] when a central method of heating was in use. [illegible] places involved the absence of [illegible] sidered that it was also very [illegible] heat should not be at too high a temperature, otherwise the air became close and stuffy, a condition which was possibly due to minute traces of CO or other incompletely oxidised carbon compounds. In conclusion, he referred to the great work undertaken by the Countess of Aberdeen as President of the Women's National Health Association of Ireland in bringing before the workers and their families the simple rules of health and common sense which are involved in the maintenance of the healthy home.

The Earl of ABERDEEN, in proposing a vote of thanks to the President for his excellent and appropriate address, said that the subject of it would appeal to them all, for they all knew what it was to suffer from the effects of a badly ventilated room. The suggestions made by Dr. Parkes had been practical and of importance. He expressed his thanks for the words of encouragement which had been given to the women workers in the Association in which the Countess had taken so great an interest.

Dr. C. PORTER (Finsbury), as one of the secretaries of the section, read a paper by Dr. Harold Scurfield (Sheffield) on the

Compulsory Notification of all Forms of Tuberculosis.

He said that consumption had been compulsorily notifiable in Sheffield since November, 1903. The administrative procedure which had been adopted as a result included the free bacteriological examination of sputum submitted by medical practitioners in the city; the visitation of notified cases by inspectors who, in addition to giving verbal advice, such as that relating to the opening of windows, leave printed leaflets containing advice and instructions; and the supply of pocket spittoons. When considered necessary disinfection was carried out. Provision had been made by the corporation for the hospital treatment of 20 males and 20 females, who as a rule remained in hospital only for short periods for the purpose of education in the methods best adapted to effect a cure and to prevent the disease spreading to others. A selection was made from those under treatment of those patients who would be benefited by a more prolonged residence in a sanatorium. Patients were also treated in the Sheffield Royal Infirmary. Nearly one-third of the total number of deaths recorded in Sheffield as due to consumption occurred in the workhouse hospitals belonging to the two boards of guardians within whose areas of administration the city of Sheffield was included. In each of these hospitals and in the infirmary modern methods of treatment were adopted. Lastly, there had lately been provided by the education committee an open-air school for delicate children. In his references to the statistical records of tuberculosis, Dr. Scurfield pointed out the necessity for giving separately the death-rates of men, women, and children. The importance of this analysis was emphasised by the fact that in Sheffield, while there was nothing remarkable about the total death-rate of both sexes at all ages, the rate for women alone was very low, and that for men and for children very high.

The Earl of ABERDEEN inquired whether there was any local opposition to the Act before it actually became law and while it was under consideration.

Dr. PORTER stated that as far as he was aware there was no opposition at all, and

The Earl of ABERDEEN congratulated the people of Sheffield upon their enlightenment.

Dr. J. C. MCWALTER (Dublin) said that the results of Dr. Scurfield's paper showed that whereas formerly 11 persons out of every 1000 died from consumption in the workhouse, now 38 persons out of the same number died there, apparently as a result of compulsory notification of phthisis. This was not desirable. It might possibly be necessary to notify in a city like Sheffield, where such a large proportion of the population worked at grinding and cutting of tools and where hundreds of men worked within a few inches of each other, but in cities like Dublin or Belfast, or in rural districts, to register a man as a consumptive branded him as a leper and hurried him into the grave. There were superstitions in science as well as in religion, and the amount of terror of the tubercle bacillus was a twentieth century superstition. First, we were assured that the bacillus would kill us, but when it failed to kill the patient we were told that he had become immune or that the soil was unfavourable. Referring to the passing of the Tuberculosis Prevention (Ireland) Act (1908), he reminded the meeting that an Order in Council had been made under which a medical practitioner was bound to notify to the medical officer of health a case of tuberculosis where the patient habitually slept in the same room with another person not so affected, and he pointed out how difficult it would be to carry out this provision consistently. He strongly disapproved of the notification clauses of the Act. In the very interesting volume published by the Women's National Health Association it was stated, on the authority of the President of the College of Physicians of Ireland, that at least 50 per cent of old men showed signs of tuberculosis. If those cases had been notified, and these men had thus become aware of the disease from which they were suffering, it is probable that they would never have become old men—the fear of the disease and the taint of the leper would have hurried them into the grave. He concluded by arguing that if hospital segregation were complementary to notification the cost would amount to at least £2,000,000 yearly.

Sir CHARLES CAMERON (Dublin) could not agree with Dr. McWalter. Ireland in some respects was far in advance of other countries, notably in the carrying out of the Vaccination Acts. He knew of no instance in Ireland of lack of belief in the efficacy of vaccination, and the Irish people had the greatest respect for all laws which they knew were useful. Ireland was the first country to have a general Act relating to tuberculosis. A terrible disease was in their midst and something had to be done to remedy it, even though that remedy itself were terrible. The inconveniences connected with the carrying out of the Act were trifling when the great object of preventing the disease was considered. The deaths from tuberculosis in Dublin were three times as many as those caused by the principal infectious diseases. The death-rate from zymotic diseases in Dublin 20 years ago was 6 to 7 per 1000 of the population, but the great sanitary improvements which had been effected had reduced that rate to 1·5 per 1000. Those improvements unfortunately had been altogether inoperative in reducing the death-rate from tuberculosis, so that something more must be done. He regretted that the Act was an optional one and was of opinion that if notification were necessary at all it should be compulsory.

Sir JOHN BYERS (Belfast) said that the question of notification must be looked at fairly and straightly if they wanted to bring Ireland into line with England, Wales, and Scotland. They had conditions in Ireland which hardly existed anywhere else, and in order to remedy those conditions they must know first of all where the cases of the disease were, and that could only be secured by means of compulsory notification. Voluntary notification was quite inadequate During six months of 1907 there were notified voluntarily in Belfast 1231 cases of consumption, but during the same period there were 926 deaths, and, assuming that there were about ten times as many cases as deaths, the number of cases which did not come to the knowledge of the health authorities must have been very large. Referring to the statement that Irishmen would not agree to carry out the provisions of the Tuberculosis Act, he reminded the meeting of the very drastic provisions relating to notification which were in force in New York where the population contained a very large number of Irishmen. He hoped that one result of that discussion would be that the Belfast corporation would adopt the Act.

Dr. T. G. NASMYTH (Edinburgh) said that there was a great deal of misapprehension as to the result of enforcing compulsory notification. There was a consensus of medical opinion, as expressed at conferences all over the world, that notification of consumption was a necessary measure. He warned them, however, that other measures were necessary in connexion with notification and as complementary to it.

Dr. A. W. GILCHRIST (Nice) said that the difficulties connected with compulsory notification were hardly realised. He considered that only the "open" cases of tuberculosis should be notified.

Mr. HERBERT JONES (Hereford) pointed out that under the Irish Act only those cases were required to be notified which were of an infectious character, therefore only "open" cases were notifiable. He urged the importance of some steps being taken by voluntary associations to look after the families of men who were suffering from consumption and were thus unable to do so themselves.

Dr. J. L. RENTOUL (Lisburn), speaking as a general practitioner, was altogether in favour of compulsory notification The medical world had done what it could for the consumptive, but now the State must step in and take its share. But the first thing the State must do was to find out who the persons were who required assistance, and this could only be done by means of compulsory notification.

Dr. J. DARLEY WYNNE (Clonmel) referred with some surprise to the fact that hitherto the cattle fairs in Ireland had received no consideration as a possible cause of the spread of tuberculosis in the country. He stated that in many important towns in Ireland the cattle fairs are held in the main streets and not on a market ground. Experiments which had been made by Dr. Shroeder of Washington had shown that about 40 per cent. of cattle apparently healthy, and only known to be tuberculous because they reacted to tuberculin, passed tubercle bacilli in their fæces. The contamination of milk and of other articles of food was thus made possible. He considered that the wide distribution of bovine tuberculosis which must occur when hundreds of cattle were congregated in public streets for hours must be a source of real danger to the community.

Mr. HERBERT JONES read a contribution by Dr. James Niven (Manchester), in which he outlined a scheme for the eradication of tuberculosis among cattle. He suggested that veterinary surgeons of known experience and special skill [illegible] s by a number of county [illegible] by Government, and they [illegible] in made in Government laboratories, the use of tuberculin otherwise than by these officers being under regulation. They would be placed in a definite relationship to the medical officer of health. Their first duty would be to select the farms most suitable for the commencement of eradication, regard being had to the character of the farmer in the first instance and then to the sanitary condition of the homestead. In carrying out the first operation of eradication the cows would be purchased subject to freedom from reaction and under such other conditions as might be deemed necessary Re-acting stock would become the property of the Government and arrangements would therefore have to be made for dealing with them. Necessary measures of disinfection would be carried out by the farmer, the materials being supplied at the public expense. The entire expense of these operations would be borne by the Imperial Exchequer. The stock having been freed from tuberculosis, any subsequent losses from the disease, which ought not to be great, would be borne by the farmer, but a biennial test would continue to be carried out by the veterinary surgeon with tuberculin provided by the Government. All cattle thus [illegible] distinguished [illegible] centres free [illegible] uring the first two or three years to a limited number of farms, but when a sufficiency of stock-producing centres had thus been created a larger number of farms could then be dealt with in the course of the year, the stock on those already dealt with being available for replacement of reacting animals.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 28TH.

President, Fleet-Surgeon J. LLOYD THOMAS, R N.

After an address from the PRESIDENT, a paper communicated by Colonel H. E. R. JAMES, R.A.M.C., on the Medical Branch of the Officers Training Corps, was read, followed by a paper by Lieutenant-Colonel R. PORTER on the Physical Training of Recruits in the Army.

In the discussion that followed the following gentlemen took part: Colonel T. H. HENDLEY, I.M.S., Staff-Surgeon E. COX, R N., and the PRESIDENT.

Colonel HENDLEY then read a paper entitled, "A Contrast Between the Treatment of the Wounded under the Moghul Emperors and King Edward VII., Emperor of India," which was discussed by the PRESIDENT, Lieutenant-Colonel PORTER, and Lieutenant-Colonel E. M. WILSON. After Colonel HENDLEY had replied the section adjourned.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 28TH.

President, Professor R. STOCKMAN (Glasgow).

Mr. GEORGE CHIENE (Edinburgh) read a paper on

Spinal Anæsthesia,

which was discussed by Dr. DUDLEY BUXTON (London), Dr. ALEX. DON (Dundee), Professor A. E. BARKER (London), Dr. J. MILL RENTON (Glasgow), Dr. G. A. H. BARTON, Mr. LEEDHAM GREEN (Birmingham), Dr. V. G. L. TIELDEN (Belfast), Dr. W. E. DIXON (Cambridge), and Dr. COFFEY (Egypt).

Professor A. E. BARKER (London) then read

A Short Note upon the Elimination of Stovaine after Spinal Analgesia,

which was discussed by Dr. NEWMAN NEILD (Bristol), Dr. W. E. DIXON (Cambridge), and Dr. H. H. DALE (London).

ANATOMY AND PHYSIOLOGY.

WEDNESDAY, JULY 28TH.

President, Professor C. S. SHERRINGTON (Liverpool)

The PRESIDENT, in his opening remarks, expressed regret at the absence of Professor Symington, and remarked upon the advantages of holding a joint meeting of anatomists and physiologists.

The following papers were read:—

1. On the Anatomy of the Achondroplastic Skeleton, by Professor A. F. DIXON (Dublin). This was discussed by Professor C. J. PATTEN (Sheffield), Dr. D. WATERSTON (Edinburgh), Dr. R. H. SCANES-SPICER (London), Dr. N. C. RUTHERFORD (Edinburgh), Professor PETER THOMPSON (London), and the PRESIDENT.

2. On Some Points in the Mechanics of Respiration, by Dr. R. H. SCANES-SPICER (London), which was discussed by Professor SHERRINGTON, Professor PETER THOMPSON, Dr. J. S. DICKEY (Belfast), Dr. N. C. RUTHERFORD, and Dr. WATERSON.

3. On Phosphatides, by Dr HUGH MACLEAN (Liverpool). This was discussed by Dr. N. C. RUTHERFORD, Dr. REID HUNT (Washington, U.S A.), Professor B. MOORE (Liverpool), and Professor T. H. MILROY (Belfast).

DERMATOLOGY AND ELECTRO-THERAPEUTICS.

WEDNESDAY, JULY 28TH.

President, Dr. W. CALWELL (Belfast)

After an introductory address by the PRESIDENT, Dr. LOUIS WICKHAM, director of the Radium Institute of Paris, gave an interesting lantern demonstration on the Treatment of Skin Diseases by Radium, which was discussed by Sir MALCOLM MORRIS, K.C.V.O. (London), Professor R. B. WILD [illegible] TOMKINSON (Glasgow), Dr. J. H. G. DORE (London), Dr. W. B. C. JAMES METCALFE (Bradford), and Dr. J. A. CODD (Wolverhampton).

After Dr. WICKHAM had replied, Dr. SEQUEIRA communicated a paper by Dr. H. Lewis Jones (London) on the Treatment of Nævus by Radium.

DISEASES OF CHILDREN.

WEDNESDAY, JULY 28TH.

President, Mr. H. J. STYLES (Edinburgh).

The morning was occupied in a discussion on Club-foot, introduced by Mr. ROBERT JONES (Liverpool), and contributed to by Mr. A. H. TUBBY (London), Mr. J. H. NICOLL (Glasgow), Mr. ALEXANDER MACLENNAN (Glasgow), Mr. E. LAMING EVANS (London), Mr. EDMUND OWEN (London), Mr. R. C. DUN (Liverpool), Mr. F. W. COLLINSON (Preston), and the PRESIDENT.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

WEDNESDAY, JULY 28TH.

President, Dr. StCLAIR THOMSON (London).

After some introductory remarks from the PRESIDENT, Dr. J. BARR (Glasgow) read a paper on

The Treatment of Tinnitus Aurium,

confining himself to various non-operative methods of ment. This was discussed by Mr. R. LAKE ([illegible] [illegible] OWLES RENSHAW (Manchester), [illegible] Mr. OLIVER CARLYLE (Edinb[illegible] Mr. W. COUSINS ([illegible]

(Dublin), Mr. LOGAN TURNER (Edinburgh), and Dr. BRYSON DELAVAN (New York).

Dr. HUGH JONES (Liverpool) read a paper on

The Association of Slight Abnormalities of the Auricle, with certain Forms of Deafness,

which was discussed by Dr. G. JACKSON (Plymouth) and Mr. LAKE.

Dr. DAN MCKENZIE (London) read a paper on the Clinical Value of Labyrinthine Nystagmus Tests; and Mr. G. JACKSON on the Etiology of Auditory Meatus Exostosis.

THE ANNUAL EXHIBITION.

THE exhibition of drugs, surgical appliances, special foods, and other matters of medical import seemed to create a greater impression on the visitors this year than has usually been the case. A quite remarkable interest was taken in this important department of the meeting. As early as Tuesday morning (the opening day) the Exhibition Hall in the Botanic Avenue, which is immediately behind Queen's University, was an animated scene of discussion between medical men and the exhibitors, while there was a consensus of opinion that the exhibits had never made a more attractive display. The hall offered the exhibitors a better chance than usual of an advantageous display, for it is a fine and spacious building, very preferable to the drill hall in which so often this big scientific bazaar has been held. The hall was built for the purpose of exhibiting objects demonstrating the application of sanitary science, and the city owes it to the generosity of Dr. Henry O'Neill.

We propose to deal with the various exhibits in the following order: (1) Drugs; (2) Surgical Instruments and Appliances; (3) Foods and Food Products; (4) Sanitary Appliances; (5) Mineral Waters, Beverages, &c.; (6) Publications; and (7) Exhibits of a Miscellaneous Character.

I. DRUGS.

Although it is true in regard to this section that there were many familiar products shown, products which recalled something of the kind shown at previous exhibitions, yet on the whole it may be said there were in many instances interesting new departures. It was not surprising to find, in view of certain therapeutic advances, that prominence was given to sera of high potency, to vaccines, and to the new organic arsenic and mercury combinations. Methods of administration by injection and inunction, by the mouth, and so forth, found excellent illustration in a series of most elegant pharmaceutical products. It is a difficult task to point out one set of preparations as being superior to another, where all were aimed at therapeutic efficiency and ease and convenience of administration.

The cases of exhibits shown by Messrs. Burroughs, Wellcome, and Co., of Snow-hill Buildings, London, E.C., were of the highest interest. In addition to their series of fine chemicals, alkaloids, &c., all of ascertained purity and activity, this firm showed their series of organic arsenic preparations, soamin and orsudan; ernutin, containing the active therapeutic principles of ergot physiologically standardised; tyramine, the chief active (basic) constituent of aqueous extracts of ergot and hemisine, a preparation of the active principle of the medulla of the suprarenal gland. They also showed several vaccines, of which the acne bacillus, gonococcus, staphylococcus, and typhoid vaccines are types, and tuberculin for treatment, for diagnosis, and for laboratory tests. Amongst the sera submitted to rigorous tests for sterility and non-toxicity were diphtheria antitoxic serum, anti-colon bacillus serum, anti-dysentery serum, antivenom, and so forth.

Amongst the preparations worth attention and shown at the admirably designed stall of the Hofmann La Roche Chemical Works, Limited, of 7–8, Idol-lane, London, E.C., was that known as digalen, described as an amorphous digitoxin, soluble in water, isolated from the leaves of digitalis purpurea. It is claimed for digalen that it admits of exact dosage, gives a prompt physiological response, has no cumulative effects within the limits of prescribed dosage, and does not cause any gastric trouble. Another preparation of interest at this stall was thiocol, a potassium salt of guaiacol sulphonate, a soluble, tasteless, and odourless substance which has been used in tuberculosis with favourable results, diminishing the number of tubercle bacilli in the sputum, preventing the frequent recurrence of night sweats, and without irritating effects on the gastric membrane. The exhibit included some fine specimens of crystallisation—e.g., caffeine and strychnine, and a preparation known as benzosalin, a benzoyl compound of salicylic acid, which is said to be useful in salicylic acid medication and without the unpleasant side-effects of the ordinary acid and the salicylates. Lastly was shown Secucarnin, a sterile solution of those principles of ergot which are hæmostatic, the nauseating or irritant constituents being entirely eliminated.

There was much to interest the physician at the tastefully arranged stall of Messrs. Parke, Davis, and Co., of 50, Beak-street, Regent-street, London, W. Of perhaps the greatest importance were their preparations containing adrenalin, the constringent and blood-pressure raising principle of the suprarenal gland isolated by Dr. Takamine in 1900, and introduced by this firm to the medical profession. In addition there were a series of bacterial vaccines prepared in the laboratory of St. Mary's Hospital, under the supervision of the director, Sir A. E. Wright; and a number of standardised fluid extracts and mercurettes for mercurial inunction. At this stall from time to time lantern demonstrations were given illustrating the preparation of serums and toxins, the physiological standardisation of drugs, and the manufacture of pharmaceutical products. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, E.C., showed a very interesting series of fine pharmaceutical products, amongst the latest of which were thyresol, a methyl-ester of santalol, a therapeutic advance on sandal-wood oil in the treatment of gonococcus infection; autan, a self-developing formaldehyde disinfectant; and spirosal, a salicylic oil for external application in rheumatism, to supersede mesotan. The exhibit included, amongst other things, soluble sodium veronal and guaiacose, a 5 per cent. solution of guaiacol-calcium sulphurate in liquid somatose, which has been employed with distinct success in disorders of the respiratory tract.

On Messrs. Oppenheimer and Son's stall, of 129, Queen Victoria-street, London, E.C., were to be seen a number of recent pharmaceutical products. Amongst these were calomel and mercurial "creams" for intra-muscular injection in syphilis, which are said to be painless in action and to cause no local disturbance. There were also shown some sera pulverettes, a pill with a fragile coating which secures the rapid administration of a drug in powdered form; and specimens of "lactigen," a culture of Metchnikoff's bacillus for the preparation of curdled milk. Messrs. Zimmer and Co., Limited, of Frankfort-on-the-Maine, who were represented by Widenmann, Broicher, and Co., of 33, Lime-street, London, E.C., exhibited some interesting compounds, prominent amongst which were euquinine, the now well-known tasteless substitute for quinine which is said to have the same physiological action of that alkaloid but without its objectionable by- or after-effects. The exhibit included allosan, a santalol derivative having advantages in the treatment of gonorrhœa; bromvalidol, a sedative and nerve stimulant; and estoral, a boric acid menthol ester for catarrh of the respiratory organs.

One preparation only, but a good one, was shown on the stall of the Hanley Chemical Manufacturing Company of Hanley, Staffordshire—viz., a liquid hæmoglobin compositus. While containing all the constituents of ox blood it is not at all unpleasant to take. The Angier Chemical Company, Limited, of 32, Snow-hill, London, E.C., exhibited samples of their emulsion of petroleum with hypophosphites. The emulsion is complete, as the microscope shows, and attention is drawn to the remarkable purity of the petroleum employed. "Miol" is the name given to a formula of admitted value in wasting diseases It is a combination prepared by the Miol Company of 82, Southwark Bridge-road, London, S.E., of olive oil, with an active malt diastase, and contains in addition iodine and glycerophosphates. Some novelties were shown by the Huxley's Pharmaceutical Products and Pasteur Vaccine Company of Chichester Rents, Chancery-lane, London. Amongst them were an excellent non-saccharine glycerole of glycerophosphates, and similar preparations but containing formates, hæmoglobin, pepsin, and red bone marrow extract respectively. There were also shown fermentactyl tablets for obtaining sour milk cultures, anti-diphtheric dragées, anti-tetanic serum, and aseptic calf lymph.

The milk of magnesia of the Charles H. Phillips Chemical Company of 14, Henrietta-street, Covent Garden, London, W.C., is, as our own analysis has shown, a pure hydrated oxide of magnesium which serves very favourably as an antacid. The same company exhibited a phospho-muriate of quinine compound, described as a combination of the wheat phosphates with muriate of quinine and strychnia. This is of value as a tonic for the nervous system and digestive organs. Messrs. Woolley, Sons, and Co., Limited, of Manchester, showed a very interesting series of galenical and pharmaceutical products, typifying care and skill in their manufacture. As examples, mention may be made of akolethe, a solution of the sedative principles of opium free from nauseous taste and having no unpleasant after effects; physiologically standardised preparations of ergot, Indian hemp, digitalis, squills and strophanthus, unguentum resorcin co., malto-hæmoglobin, and a series of elixirs of value in disorders of the respiratory tract. They exhibited also an assortment of medical appliances, including trusses, enemas, midwifery outfits, aseptic syringes, and so forth. The chief subject of Messrs. H. and T. Kirby and Co.'s exhibit was purgen, described as the "ideal purgative" which is known to be identical with phenolphthalein, the useful alkali and acid indicator used by chemists in analysis. There can be little doubt of the usefulness of purgen owing to its non-irritating action.

Devoted as well to the exhibition of certain valuable food products, which we hope to describe in a future number, Messrs. Savory and Moore of 143, New Bond-street, London, W., [illegible] chemical food, an excellent preparation of red bone marrow, with iron and calcium glycerophosphates. Messrs. Reynolds and Branson of 13, Briggate, Leeds, succeeded in making their exhibit artistic and attractive by a selection of elegant pharmaceutical preparations, including their concentrated mixtures, bismuth preparations, concentrated tinctures, and opianthe, a preparation of opium containing 0·75 per cent. morphine, and free from nauseous odour and resin.

Liquors, bismuth preparations, heroin compounds, medicinal syrups, and medicated pastilles were praiseworthy features of the exhibit of Messrs. Wyleys, Limited, of Coventry. In addition were some hermetically sealed sterilised glass capsules known as "Wylettes" of actinic proof glass containing 1 cubic centimetre of a sterilised liquid ready for immediate hypodermic injection. The stall of the Maltine Manufacturing Company, Limited, in conjunction with Messrs. Carnrick and Co., Limited, of 24 and 25, Hart-street, Bloomsbury, London, W.C., contained a number of useful preparations in which maltine serves as an effective vehicle. Such are, for example, maltine with hypophosphites, with iron, with pepsin and pancreatin, with creasote, with cascara sagrada, and so on.

Besides a number of excellent apparatus for producing spray (vaporisers, atomisers, insufflators, &c.) in connexion with which his name is so well known, Mr. Frank A. Rogers of 327, Oxford-street, London, W., exhibited some useful medicaments containing heroin; while mention should be made of muscatol, a pleasantly perfumed liquid, proved, it is stated, to be an absolute protection from mosquitoes, gnats, midges, and other insect pests. A veterinary muscatol is also prepared in a concentrated state for the protection of horses, cattle, and dogs from the attacks of similar pests. Messrs. B. Kuhn and Co. of 16, Rood-lane, London, E.C., exhibited samples of the interesting vegetable digestive ferment papain, the exhibit including their pure specimens of ethyl chloride and the antiseptic chinosol. The Saccharin Corporation, Limited, of 165, Queen Victoria-street, London, E.C., showed specimens of novocain, the now well-known local anæsthetic, which is considerably less irritant than other sustitutes for cocaine, while producing an equal degree of anæsthesia. The claims of novocain were set forth fully in a pamphlet on the subject embodying the scientific contributions which have been made from time to time establishing claims in its favour.

II.—SURGICAL INSTRUMENTS AND APPLIANCES.

Compared with previous years this section was not so fully represented. The exhibits relating directly to surgical appliances were quite few in number, although it must be pointed out that considerable interest was shown in the appliances that were presented to view. Perhaps the greatest variety of surgical instruments and accessories was to be found on the two exhibits of Messrs. Down Brothers of 21 and 23, St. Thomas-street, London, S.E., who reserved one stall for the demonstration of aseptic hospital furniture and another for instruments. The exhibit comprised a series of new and original designs which compelled inspection by those desirous of keeping pace with modern appliances.

The stall of Messrs. Siemems Brothers and Co., Limited, of Caxton House, Westminster, London, S.W., displayed X ray outfits and accessories of the latest design, offering the most recent facilities in regard to the application of the [illegible] mention should be made [illegible] h, as its title implies, is designed for the use of the general practitioner. It consists of a 16-inch spark induction coil with 3-part primary winding and spark gauge; a small switch table with ammeter, rheostat with 15 contacts, two three-way switches for the Wehnelt interrupter (which is double and provided with a lead cover and silencer), and a protective screen lined with lead and provided with a lead-glass window, all on castors. When the outfit is used for instantaneous radiography the shunt resistance is cut out and very short exposures can then be obtained by means of the main switch. The exhibit included a larger apparatus with rotating high-tension rectifier for connecting to 220 volt continuous current mains and a universal and safety protective tube-stand. Attention should also be drawn to a series of radium and radio-active substances and radioactive earth for local application and for baths. Messrs. C. A. Hoefftcke, Limited, of 21, Woodstock-street, London, W., exhibited their well-known appliances for joint diseases, for fractures, a corset for lateral curvature, and Openshaw's appliance for obtaining extension of the spine in the treatment of scoliosis and caries or injuries to the spine. The exhibits included the auto-gloving machine, the distinct merits of which have already been discussed in our columns.

Messrs. Meyer and Meltzer of 71, Great Portland-street, London, W., presented examples of recent surgical instruments which are described in their new catalogue on "General Surgery." A feature was made of their "University" examination lamps for the general surgeon, the ophthalmologist, the laryngologist, the aurist, the gynæcologist, and so on. Close by Messrs. Fannin and Co., Limited, of Dublin, had a quite interesting assortment of up-to-date surgical instruments, including anæsthetic appliances, midwifery outfits, electro-medical appliances, urine-test cases, orthopædic appliances, and so forth. The Lee antiseptic air producer (S. Lee, 51, Conduit-street, London, W.) attracted considerable attention. This apparatus produces a warm powerful current of antiseptic air in a continuous volume at a velocity of 250 feet per minute, which may be used for inhalation. The apparatus has many advantages in the treatment of the lungs and throat with antiseptics, and its action is similar to that of the Bunsen burner. The Liverpool Lint Company, of Mark-street Mills, Netherfield-road North, Liverpool, showed an interesting assortment of surgical dressings, absorbent gauze tissue, surgeons' tow, carbolised tow, and "vulnoplast," a new surgical antiseptic dressing with a self-adhesive edge, requiring no other attachment to dress a wound. A local firm, Messrs. John Clarke and Co., Limited, of 8, Donegal-square West, Belfast, had a very neatly arranged [illegible] instruments, bandages (Irish linen [illegible] &c. At the stall of [illegible] London, E.C., a very effective and simple apparatus for producing chloride of ammonium smoke was shown.

The excellent exhibit of Messrs. John Weiss and Son, Limited (287, Oxford-street, London, W.), of surgical instruments attracted the notice due to a careful assortment of appliances of the most recent model. The exhibit included a selection of ophthalmic instruments, Landolt's armamentarium, retinoscopes, and so on. A very complete exhibit of surgical instruments was also shown by the Holborn Surgical Instrument Company, Limited, of Holborn-circus, London, E.C., a feature of it being the Holborn £25 prize set of instruments for surgeons commencing to practise. Practically the only illustration on any scale of treatment by radiant heat and light was given by the Dowsing Radiant Heat Company, Limited, of 24, Budge-row, Cannon street, London, E.C, while Messrs. Hearson, Limited, of 235, Regent-street, London, W., shared the distinction of alone exhibiting biological incubators. Here, also, were autoclaves, centrifuges for hand or mechanical power, Hearson's patent opsonic incubator for the determination of opsonic index, and a biological incubator for researches in embryology and histology.

Messrs. Gale and Sons, Ltd., of Dominion Works, Birmingham, and Whitfield Bedsteads, Limited, of Watery-lane, Birmingham, exhibited a series of beds for hospital and asylum use known as the "Lawson Tait" spring bedsteads, the exhibit including also some excellent examples of aseptic hospital furniture. Mr. G. H. Zeal, of 82, Turnmill-street, London, E.C., presented for inspection a considerable number of his "Repello" clinical thermometers, which obviate the shaking down of the mercury column in order to reset it by means of a depressible bulb. He exhibited also an aseptic germ-proof clinical thermometer. There were, lastly, several appliances of medical and surgical interest shown at the stall of Messrs. Reynolds and Branson, Limited, of 13, Briggate, Leeds, including some special retractor and dissector forceps, towel clips, apparatus for testing urine, ophthalmic lamp, first-aid case, and many other apparatus calculated to assist materially the general practitioner.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination held on July 19th, 20th, 22nd, and 23rd the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—[illegible] University College; Wilfrid Andrew, King [illegible] thur Batchelor, St. Mary's Hospital; Mal [illegible] Hospital; Samuel Caplan, St. Mary's Hospital; Francis Howard Cleveland, St. Bartholomew's Hospital; George Malcolm Coope, Manchester University; David Lloyd Davies, University College, Cardiff; Ralph Marsh de Mowbray, St. Thomas's Hospital; Edmund Rupert Dermer, Middlesex Hospital; Carl Keating Graeme Dick, and Sidney Ernest Elphick, St. Mar [illegible], London Hospital; John Wesley Gilbert [illegible] ol; Evan Williams Griffith, University [illegible] Gwynne-Jones, London Hospital; Jan [illegible] ng Cross Hospital; Charles Lyon Herkl [illegible] College; Rupert Bannatyne Hick, St. Mary's Hospital; Frank Edwin Johnson, Plymouth Technical School; Richard Bertram Johnson, University College, Bristol; Frank Winter Lawson, Brighton Municipal College of Science; William Douglas McDonald, Birkbeck College; Robert Charles Matson, Guy's Hospital; Claude Jocelyn Delabere M [illegible] istol; John Meredydd Parry, University [illegible] Victor Percy Pill, St. Mary's Hospit [illegible] yn, Guy's Hospital; John Thomas Sam [illegible] John Patrick Shaw, Middlesex Hospital [illegible] St. Mary's Hospital; Frederick Lionel Spalding, Guy's Hospital; John Masfen Stack, Birmingham University; William Allan Stewart, London Hospital; Gavin Stiell, St. Thomas's Hospital; Thomas Harold Thomas, London Hospital; Cedric Norman Vaisey, University College, Bristol; Philip Pennefather Warren, London Hospital; Thomas Mansergh Wood-Robinson, Portsmouth Municipal College; and Pelham Vansittart Wynn-Werninck, University College, Bristol.

Physics.—George Aspinall-Stivala, St. Bartholomew's Hospital; Hugh Woodward Barnes, King's College; Cyril Armond Bernard, Liverpool [illegible] Charles Oakley Brown, Birmingham Uni- [illegible] ord Cresswell, Middlesex Hospital; [illegible], University College, Bristol; Arthur [illegible] Thomas's Hospital; William Reginald [illegible] Hospital; Alfred Morgan Hughes, [illegible] iversity; Joseph [illegible] Alwyne Harold [illegible] Prichard, Uni- [illegible] Gerald Robinson, Manchester University; [illegible] Smith, Charing Cross Hospital, Walter Bernard Risk Stower, St. Bartholomew's Hospital; Frank Sykes, Leeds University; Arthur Geoffrey Turner, St. Bartholomew's Hospital; Oscar Ramsay Unger, University College; Algernon Randolph Upton, St. Bartholomew's Hospital; George William Watson, Leeds University; and Kim Glen Wee, St. Thomas's Hospital.

Chemistry.—Albert John Drew, Guy's Hospital; Edward Hugh Morris, Charing Cross Hospital; John Casper Munch, London Hospital; William John O'Kan [illegible] Chisman Pitman, Hartley Colle [illegible] Plant, Manchester University; [illegible] Hospital; Charles Pearse Crod [illegible] Hospital; Evelyn Alexander Sutton, Charing Cross Hospital; Henry John Hugh Symons, King's College; and George Harvey Duder Webb, University College.

Biology.—Alexander William Charles Bennett, St. Thomas's Hospital; William McHutchison Binning, University College; Samuel Caplan, St. Mary's Hospital; Paulin Roger Chevreau, Guy's Hospital; William Lonsdale Cockcroft, Manchester University; David Lloyd Davies, University College, Cardiff; John Edgar Davies, Guy's Hospital; Ralph Marsh de Mowbray, St. Thomas's Hospital; Charles Theodore James Drobig, St. Mary's Hospital; Aylmer Green, City of London College; James George Hanahn, Charing Cross Hospital; Charles Lyon Herklots, B.A. Oxon., University College; Alfred Morgan Hughes, Birkbeck College; Frank Edwin Johnson, Plymouth Technical School; Harold Dunmore Lane, London Hospital; Frank Winter Lawson, Brighton Municipal College of Science; Alwyne Harold Manfield, London Hospital; Robert Charles Matson, Alan Vivian [illegible] Stanley Morgan, Guy's Hospital; Edward H [illegible] ross Hospital; Arthur Rennie [illegible] Kenneth Montague Nelson [illegible] William John O'Kane, Middlesex Hospit [illegible] rtridge, Guy's Hospital; Hugh Ley Puxon [illegible] llege; William Reginald Pryn and Pierre [illegible] Rathier du Vergé, Guy's Hospital; Cecil [illegible] Mary's Hospital; Archibald Frank Salsbu [illegible] John Thomas Samuel and Vincent Russell Smith, St. Mary's Hospital; Frederick Lionel Spalding, Guy's Hospital; John Masfen Stack, Birmingham University; George Sydney Stathers, Cambridge University and St. Mary's Hospital; Gavin Stiell, St. Thomas's Hospital; Ramon Romero SyQuia, London Hospital; Cedric Norman Vaisey, University College, Bristol; and Vernon Charles Whitby Vickers, St. Mary's Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. A. [illegible] Cambridge and London Hospital; W. J. M [illegible] rdeen; and H. M. Pollard (Sections I. and [illegible]

Medicine.—J. M. Burke (Section I.), Middlesex Hospital; A. H. C. Dawes (Section II.), [illegible] J. A. Jones (Section I), Manchester; W. J. [illegible] and Aberdeen; H. M. Pollard (Sections I. [illegible] Hospital; and J. W. Williams (Section I.), Guy's Hospital.

Forensic Medicine.—H. V. Humphry, Westminster Hospital; W. J. Morton, Edinburgh and Aberdeen; and H. M. Pollard, Royal Free Hospital.

Midwifery.—W. H. Hooton, Leeds; E. B. Keen, Charing Cross Hospital; G. Moyer, University of Graz; W. J. Morton, Edinburgh and Aberdeen; J. K. Nariman, Bombay; and H. M. Pollard, Royal Free Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: H. A. Hancock, W. J. Morton, and H. M. Pollard.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

M.D. EXAMINATION FOR INTERNAL AND EXTERNAL STUDENTS.

Branch I., Medicine.—Edwin Lancelot Ash, B.S., St. Mary's Hospital; Ernest Frederick Finch, B.S. and Thomas Mellor Hardy, B.S., University of Sheffield; Pantland Hick, B.S., University of Liverpool; Arthur John Scott Pinchin, B.S. (University medal), St Thomas's Hospital; and Edwin Joseph Wyler, B.S., London Hospital.

Branch III., Mental Diseases and Psychology.—Henry De Vine, B.S. (University [illegible], Bristol.

Branch IV., [illegible] *of Women.*—Eustace James Carey Dick [illegible] St. Mary's Hospital; Philip William H [illegible] and Dorothea Clara Maude, B.S., Marian Mayfield, B.S., Eleanor W. Perkins, B.S., Mary Flint Taylor, B.S., Ida Clare Tengely, B.S., and Edith Louisa Young, B.S., London (Royal Free Hospital) [illegible] Women

Branch V., State Medicine.—Dora [illegible] London (Royal Free Hospital) Sch [illegible] University College; Henry Joseph [illegible] Hospital and King's College; Cec [illegible] Cross Hospital and University Colle [illegible] B.S., St. Mary's Hospital.

Branch VI., Tropical Medicine.—James Connor Maxwell Bailey, St. Bartholomew's Hospital; and Frederick Fenn Elwes and Ivor Davenport Jones, Middlesex Hospital and London School of Tropical Medicine.

M.S. EXAMINATION FOR INTERNAL AND EXTERNAL STUDENTS

Seymour Gilbert Barling, University of Birmingham; Vincent Zachary Cope, B.A., M.D., St. Mary's Hospital; and Albert James Walton, B.Sc., London Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

UNIVERSITY OF LIVERPOOL.—The following degrees were conferred at the graduation ceremony on July 10th:—

Ch.M. (*Ex-officio*).—W. Thelwall Thomas and Robert Jones.

M.D.—J. A. Murray Bligh, H. E. Heapy, H. R. Hurter, L. Hutchinson, A. Hendry, T. W. Jones, S. J. M'Clellan, J. E. W. MacFall, and J. Graham Martin.

M.B., Ch.B.—W. A. Daley (first-class honours), K. J. C. Bradshaw (second-class honours), A. G. W. Owen (second class honours), N. W. Steinberg (second-class honours), and J. W. Cropper.

At examinations held recently the following were successful:—

FIRST M.B., CH.B. EXAMINATION.

Parts I. and II.—C. W. Dixon, J. R. Jones, E. B. Marsh, A. C. Mooney, H. S. Pemberton, R. E. Roberts, and J. St. G. Wilson.

Part II.—F. A. Belam, A. D. Bigland, H. E. Marsden, R. Martlew, and Beatrix M. Walker.

SECOND M.B., CH.B. EXAMINATION.

Part A.—D. H. Clarke, R. C. Crooke, J. E. Getting, R. Heald, N. P. Laing, J. London, and G. W. Mooney.

Part B.—R. W. Gemmell and M. T. Morgan.

FINAL M.B., CH.B. EXAMINATION.

Part I.—J. Bamforth, J. E. Barnes, J. Campbell, A. A. Dear, E. S. Miller, W. R. Wade, and T. W. Wadsworth.

Part II.—K. J. C. Bradshaw, J. W. Cropper, W. A. Daley, A. G. W. Owen, and N. W. Steinberg.

Final B.D.S. Examination.—F. Halsall.

First L.D.S. Examination.—P. G. Capon, C. Q Dinn, S. S. Tiflin, and W. Williams.

Second L.D.S. Examination.—J. Burns, W. B. G. Jones, and J. Tyson.

Final L.D.S. Examination.—G. F. P. Clapham.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful:—

Degree of M D. by Examination.—J. O. Smyth.

Degree of Ch.M.—H. Archibald Smith.

[illegible]

Second M.B. and Ch.B. Examination.—G. S. Bate and G. E. Sawdon. Anatomy: Harold Harrison, D. S. Jones, and H. O. Wright.

Third M.B. and Ch.B [illegible] Anatomy: P. S. G [illegible]

[illegible] mpson, James Walker, [illegible] Warner, and Gordon Whitehead. [illegible] K. D Bean, Rupert Briercliffe, [illegible] A. W. Gaye, P. S. Green, Harold [illegible] Howlett, R. C. Hutchinson, R. A. [illegible] Lapage, W. H. Laslett, Jane [illegible] Howarth Parkinson, W. Hoyle [illegible] B. Scott, W. A. Sneath, William [illegible] G. K Thompson, James Walker, [illegible] Warner, and Gordon Whitehead.

Diploma in Public Health.—Andrew Baxter, Frank Butterfield, R J. Chapman, J. A. Fairer, D. P. M. Farquharson, C. C. Finlator, Alexander Grant, Henry Herd, Harriet McCloghrey, Annie Mooney, Sheila M. Ross, Elsie M. Royle, Barnett Saul, H. G. Ward, and Henry Whitehead.

Sanitary Inspectors Certificate Examination—J. H. Colley, Harold Howard, H. M. Jackson, S. Smith, and Lilian Watson.

Final B.D S.—O. R. Allison.

Diploma in Dentistry, Final Examination.—J. O'H. Kennedy.

Diploma in Dentistry, Third Examination.—C. E. McNabb.

UNIVERSITY OF DURHAM.—At the Convocation held on July 24th the following degrees and diploma were conferred:—

Doctor of Medicine.—Vincent Edgar Badcock, Charles William Mènelaus Hope, Elizabeth Niel Niel, and Howard Bewlay Stephenson.

D [illegible] *n Years' Standing.*— [illegible] ohnson Hildige, John [illegible] oseph Adam Nolan, [illegible] nest Ringrose, John [illegible]

B [illegible] *of Surgery (B S.)*— [illegible] n George Campbell, M.A., Harold Alexander Cooper, Patrick Albert Galpin, Francis [illegible] upon-Tyne

Degree of Bachelor of Hygiene (B.Hy.)—Sydney Havelock, Howard Bewlay Stephenson, and Thomas Leathard Wormald.

Diploma in Public Health (D.P.H.).—Sydney Havelock, William Tait Sewell, Howard Bewlay Stephenson, Frank Thomas Herbert Wood, and Thomas Leathard Wormald

At the Third Examination for the degree of Bachelor of Medicine the following candidates satisfied the examiners:—

P [illegible] *and Elementary* [illegible] amilton Barclay, [illegible] *Honours (Second* [illegible]

[illegible]

LONDON SCHOOL OF TROPICAL MEDICINE.—The following students have successfully passed the examination held at the end of the thirtieth session, April to July:—

*P. Bahr, *P. J. de Miranda, *J. A. Harley (Colonial Service), *R. Brooke (Captain, U.S. Army), *R. A. Lloyd (Captain, I.M S.), C H. Bowle-Evans (Major, I.M.S.), W. E. Giblin, J. L Lunham (Captain, I.M S.), T. Chalmers, W. H. Peacock (Colonial Service), [illegible]

In all, 51 students have taken out the course. The accommodation at the *school provides for only 40 students in* [illegible] out five in each of the special [illegible] t classes the school has been [illegible] the generosity of a friend of the school, the laboratories will be enlarged during the long vacation, and it is hoped that when the school reopens in October there will be sufficient accommodation for all who desire to go through the curriculum even if they are more numerous than in the present session.

UNIVERSITY OF EDINBURGH.—The following degrees in medicine and surgery were conferred at the graduation ceremonial of the University of Edinburgh on July 23rd:—

Doctor of Medicine—‡James Allen Ainscow, Alford William Anderson, Marion Hamilton Archibald, Breadalbane Blacklock, Walter James Buchanan, ‡Claude Ernest Addison Coldicutt, [illegible]

* Awarded Gold Medals for their theses.
† Highly commended for their theses
‡ Commended for their theses.

Master of Surgery—William Maxwell Munby and David Percival Dalbreck Wilkie (awarded gold medal for thesis).

Bachelor of Medicine and Bachelor of Surgery.—Fergus Armstrong, Alice Elizabeth May Babington, Thomas Henry Balfour, Thomas Chalmers Borthwick, Ajit Mohan Bose, William Gillon Brand, [illegible] Gavin Stiell Brown, †Alexander [illegible] Harry [illegible] arbara [illegible] ackay, [illegible] ander [illegible] MacQueen, Andrew Jam [illegible]

M'Kay Reid, †John Renwick, †D [illegible] rtson, William Stewart Robertson, Dermi [illegible] Ross, Richard Picton Rosser, Charles [illegible] James M'Intosh Shaw, Kerr Simpson, Gec [illegible] Henry Faithful Smith, George Smith Sc [illegible] illiam Stewart, Cyril Patrick [illegible] van, Arthur Loudoun Taylor, Henry [illegible] Thompson, Wyville Smyth Thoms [illegible] e Whetter, John Wilson, *John Dykes Wilson, and Margaret Chapel Young.

* Passed with First-class Honours.
† Passed with Second-class Honours.

Diploma in Tropical Medicine and Hygiene.—Ethelbert William Dyer and Joseph Robinson.

UNIVERSITY OF ABERDEEN.—The following degrees were conferred on July 21st:—

Degree of M.D.—†Williamina Abel, M.B., Ch.B.; *T. C. Boyd, M.A., M.B., Ch.B.; E. K. Mackenzie, M.B., Ch.B.; and *C. J. R. Milne, M.B., C.M., I.M.S. (under Old Regulations).

* Commendation for Thesis. † Honours for Thesis.

Degree of M.B., Ch.B.—G. S. Melvin (second class honours), W. J. Allan, W. J. Calder, M.A., R. W. Chalmers, W. Chapman, D. Craig, R. G. Davidson, H. Duguid, R. W. Eddie, A. M. Geddes, W. I. Gerrard, Elizabeth McHardy, G. Macpherson, J. Rae, M.A., G. E. Shand, W. L. Stephen, F. W. Stuart, J. E. Thompson, and R. Tindall.

John Murray Medal and Scholarship (awarded to the most distinguished Graduate (M.B.) of 1909).—G. S. Melvin.

The Diploma in Public Health was also conferred on—

J. Laing, M.A., M.B., Ch.B. Aberd.; J. A. Milne, M.B., Ch.B. Aberd.; and J. A. Watt, M.B., Ch.B. Aberd.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. N. H. Swellengretel has been recognised as *privat-docent* of the Morphology of the Protozoa.—*Baltimore (Johns Hopkins University):* Dr. Clemens von Pirquet of Vienna has been appointed Professor of Pædiatry.—*Berlin:* Dr. P. Fraenckel has been recognised as *privat-docent* of State Medicine, Dr. Katzenstein as *privat-docent* of Laryngology and Otology, and Dr. Forster, Assistant in the Clinic for Mental and Nervous Diseases, as *privat-docent* of Psychiatry and Neurology.—*Breslau:* Dr. Robert Scheller of Königsberg has been appointed to the charge of the Department of Hygiene in the University Institute in succession to Professor Reichenbach.—*Freiburg:* Dr. Oscar de la Camp has been appointed Professor of Medicine in succession to Dr. Bäumler, retired.—*Gottingen:* Dr. Heinrich Vogt, *privat-docent* of Psychiatry, has been granted the title of Professor.—*Gratz:* Dr. Walter Schauenstein has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Greifswald:* Dr. Richard Stern of Breslau has been appointed Extraordinary Professor of Clinical Medicine in succession to Dr. Minkowsky.—*Kiel:* Dr. Hoppe Seyler has been promoted to an Honorary Professorship.—*Marburg:* Dr. Edward Müller of Breslau has been appointed Extraordinary Professor of Medicine.—*Munich:* Dr. Bernhard Heine of Königsberg has been appointed Professor of Otology.—*New York (College of Physicians and Surgeons):* Dr. R. Burton-Opitz has been appointed Professor of Physiology in succession to Dr. John G. Curtis, resigned.—*Prague (German University):* Dr. Gallp has been offered the post of Professor of Anatomy.—*Prague (Bohemian University):* Dr. Josif Znojemsky has been recognised as *privat-docent* of Surgery.—*Rio de Janeiro:* Dr. Aloysio de Castro has been appointed Professor of Medical Pathology in succession to Dr. Miguel Pareira.—*Rome:* Dr. Umberto Deganello has been recognised as *privat-docent* of Medical Pathology.—*Tubingen:* Dr. Max Brunn, *privat-docent* of Surgery, has been granted the title of Extraordinary Professor.—*Turin:* Dr. Francesco Anellani of Pavia has been recognised as *privat-docent* of Neurology.—*Utrecht:* Dr. van Leeuwen has been recognised as *privat-docent* of Pathological Anatomy.—*Vienna:* Dr. Nikolaus von Jagie has been recognised as *privat-docent* of Medicine.

LEICESTER INFIRMARY.—At a meeting of the house committee held on July 28th the following resolution was moved by Sir Edward Wood (chairman of the board), seconded by Mr. B. W. Russell, and carried unanimously:—

[illegible] of the infirmary. The house com- [illegible] ir deep gratitude and great appreciation not only of this present handsome gift but of former generous contributions respectively to the extension fund amounting in all to £3000, and of Messrs. N. Corah and Sons' continued interest in the work, of the infirmary:

PRESENTATION TO A MEDICAL PRACTITIONER.—At Carmel Methodist Chapel, Abercrave, Swansea Valley, recently, Mr. T. E. Richards, M.B., Ch.B. Edin., J.P., medical officer of health to the Ystradgynlais district council, was presented with an illuminated address, diamond scarf-pin, and gold chain. Mrs. Richards was also made the recipient of a diamond ring, a pair of silver candelabra, and a case of cutlery. The presentation was organised to signalise Dr. Richards's appointment to the commission of the peace for the county of Brecon.

THE QUEEN ALEXANDRA SANATORIUM, DAVOS.—The prospective opening of the sanatorium for the reception of patients early in this autumn was announced from the chair at the sixth annual meeting of the council, held at 11, Chandos-street, Cavendish-square, W., on July 16th, by the President, the Lord Balfour of Burleigh, who has laboured so long and so successfully in the difficult task of raising funds. The magnificent donation of £25,000 just received from a munificent sympathiser, who desires that his name shall not be published, not only supplies the necessary balance to complete the work and to open the sanatorium free from debt, but provides the means for its scientific equipment and for future extensions. For the present the sanatorium will accommodate 54 patients, all in single rooms. But the public rooms are devised for a full complement of 120 patients. The Davos Invalid's Home, the original foundation of the late Mrs. Lord, which for so many years was the only representative of our national charity in Davos, has now ended its task and fulfilled the purpose for which it was initiated—namely, that of developing into a national sanatorium. The home had been granted Royal patronage as far back as 1899.

THE KING AT THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—The new in-patient department of the Royal National Orthopædic Hospital was opened by the King on July 23rd. His Majesty, who was accompanied by the Queen and Princess Victoria, was received at the entrance, where a guard of honour of the Honourable Artillery Company were drawn up, by the Duke of Marlborough (the president of the hospital), Lord Denbigh (the chairman), Lady Denbigh, the Mayor and Mayoress of Marylebone, Sir R. B. Martin, and Sir Samuel Scott (the treasurer). Subsequently an address was read to Their Majesties, in which it was stated that the committee of King Edward VII. Hospital Fund for London, having realised that great economies of management might be effected by a policy of amalgamation among those special hospitals carrying on similar work in London, had urged the committees of the old Royal, National, and City Orthopædic Hospitals to amalgamate their funds and build a central institution. That building, which provided for 200 in-patients, most of whom were children suffering from malformations which could be cured in the early stages, was the first realisation of the policy of concentration. In addition to the hospital itself they had a nurses' home and an out-patients' department, where last year more than 11,000 cases were treated. The cost of the buildings had amounted to about £75,000, of which £20,000 were still required. More than 400 patients were now waiting for admission. The King, in his reply, said he was sure that there was no lack of generosity among those who were able to contribute to the support of such an institution, and that the pressing needs of the hospital merely required to be brought home to the imagination of those who would be glad to give did they but realise the urgent necessity for help. Lord Denbigh then made a number of presentations to the King, and the ceremony concluded.

LONDON COUNTY COUNCIL.—At its meeting on July 27th the London County Council adjourned until after the recess the consideration of the Asylums Committee's recommendation that two receiving houses for the early treatment of the insane should be established in the metropolis (see THE LANCET, July 24th, p. 249). When the matter comes up again Mr. Hayes Fisher has given notice to move on behalf of the Finance Committee that only one receiving house be established.—At the same meeting the Public Health Committee submitted to the Council a proposal (announced in THE LANCET of July 17th, p. 199) that Parliamentary powers should be sought to enable sanitary authorities in the metropolis [illegible] of stables and to control the sal[illegible] committee's recommendation, [illegible] able opposition, and on a divi[illegible] not forthcoming to enable the matter to be proceeded with Mr. Simmons, who moved the reference back, did not object to the inspection of [illegible] ought that the growth of motor [illegible] of the horse" made legislation [illegible] Mr. Whitaker Thompson, who seconded, had such a dread of officialism that he hinted uncleanliness might be preferable. Mr. Gilbert Johnstone, chairman of the committee, urged that if the premises of large cartage contractors and cab proprietors were more cleanly, the fly nuisance, which in his experience was worse in the East End of London than in Egypt, would be much abated. It might also be possible to stamp out glanders, in dealing with which the Council spent thousands of pounds annually. Mr. Johnstone mentioned that nine of the metropolitan borough councils wished to have powers to inspect costermongers' barrows. At present shopkeepers were subject to constant inspection, but street vendors escaped scot free. Mr. Johnstone's arguments, however, failed to win over a sufficiently large majority of the Council. Less than two-thirds voted in favour, and the proposal fell through.

TWO NOTABLE RUSSIAN LIBRARIES —The *Torg. Prom. Gazeta* prints a message from Novotcherkask saying that the Donsk Polytechnic is about to acquire the Mendeleieff Library, for which purpose the institution is endeavouring to raise 12,000 roubles The *Novoe Vremya* states that the Pirogoff Library has acquired the library of Professor Polotebnoff, who died last year. It consists of some 400 volumes on dermatology and other branches of medical science, and it was so well known in Europe that the professor's widow received offers from Leipsic and Dresden for the collection, which includes the learned professor's own works on dermatology. But she preferred to make a gift of the collection to a Russian institution.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Departmental Committee on Coroners

THE first report of the Departmental Committee appointed to inquire into the law relating to coroners and coroners' inquests and into the practice in coroners' courts has been presented to Parliament

The Local Education Authorities (Medical Treatment) Bill.

The Local Education Authorities (Medical Treatment) Bill has passed through all its stages in the House of Commons. When it came up for consideration on report a new clause was added in the following terms "Nothing in this Act shall be construed as imposing any obligation on a parent to submit his child to medical inspection or treatment under section thirteen of the Education (Administrative Provisions) Act, 1907." The Bill was afterwards read a third time

Milk and Dairies (Scotland) Bill

Some alterations have been introduced into the text of the Milk and Dairies (Scotland) Bill by the House of Lords The committee stage was completed at one sitting on July 22nd The Bill, by Clause 5, required that all dairies should be licensed annually by the local authority Lord BALFOUR of BURLEIGH took exception to the trouble involved to the dairyman in taking out an annual licence, and put forward a proposal to institute a register of dairies When once a dairy was on this register it was not to be removed except for a sufficient reason Amendments carrying out this proposal were inserted in the clause against the desire of the Secretary for Scotland At the instance of Lord PENTLAND Clause 9 was recast. By it, as it now stands, a local authority which finds that milk is being brought into its area from a district where the provisions of the Bill are not properly observed must first complain to the local authority of that district before applying to the Local Government Board to intervene Several other changes with regard to details were introduced into the Bill

Nurses' Registration.

Delegates from organisations in favour of the registration of nurses had a meeting at the House of Commons on July 26th Their object of meeting was to consider the terms of a Bill which might prove acceptable to all the organisations, and as such would be introduced next session It is understood that obstacles were encountered in the consideration of the details of the Bill, and no decision was made with regard to them.

The Health of the Troops in India

A motion of Sir WILLIAM COLLINS has been passed by the House of Commons for a return showing the cases of, and deaths from, enteric fever, cholera, plague, and small pox (with corresponding rates per 1000) in the native army and among European troops in India respectively, for each year from 1900 to 1908 inclusive

HOUSE OF COMMONS.

WEDNESDAY, JULY 21ST.

The Inspection of Diseased Meat.

Mr WATT asked the President of the Local Government Board what countries in Europe besides Great Britain had their meat inspection now done by their medical officers of health, and whether, in view of the public danger if unsound imported meat was not detected, he would see that all inspectors appointed in the future had attended a course of lectures on meat inspection and had taken a certificate thereon —Mr. BURNS answered The information at my disposal does not enable me to answer the first part of the question precisely, but I may point out that other European countries do not, as a rule, have a service of local medical officers whose administrative functions correspond with those of medical officers of health in regard to the inspection of food. I have no reason to believe that the port medical officers of health cannot satisfactorily perform the duty of judging whether meat is unsound. It is, however, the practice of the Local Government Board before sanctioning the appointment, under the Foreign Meat Regulations, of inspectors or other persons to act under the direction of the medical officer of health in relation to the powers and duties imposed on him by the regulations, to require evidence that these persons are qualified to perform them

Mr W. THORNE: In the event of meat being condemned has the right honourable gentleman any guarantee that it is destroyed?

Mr BURNS: Yes, it is destroyed in every case Unsound meat is invariably sent to the destructor and a certificate is given of its destruction

Mr W. THORNE: What occurs in the many cases where there is no destructor?

Mr. BURNS The unsound meat is destroyed in other ways—in furnaces or by means of chemicals.

The Manufacture of Morphine in India.

Mr. LAIDLAW asked the Under Secretary of State for India whether the Indian Government had established or contemplated the establishment of a factory for the manufacture of morphine.—The MASTER of ELIBANK replied Opium alkaloids in small quantities are extracted in the Government opium factories from waste opium, but the Indian Government has not established and does not contemplate establishing a factory for the manufacture of morphine

Indian Medical Practitioners

Mr KETTLE asked the Under Secretary of State for India whether he was aware that there were highly qualified and experienced Indian medical practitioners who were not allowed to work even as honorary surgeons and physicians on the staff of Government hospitals, and whether any steps would be taken to put an end to the existing system, which was detrimental to the interests of all concerned —The MASTER of ELIBANK wrote in reply: The number of surgeons and physicians who can be attached, in whatever capacity, to Government hospitals is necessarily limited As to the policy of the Secretary of State and the Government of India in regard to medical appointments generally, I would refer the honourable Member to the papers recently presented to Parliament

Mr KETTLE also asked whether the chief medical advisers to the Government of India and to the local governments were to be military officers of the Indian Medical Service, whether the appointment of civil medical practitioners to important posts would depend on the recommendation of these officers, and whether he was aware of the general belief amongst Indians that there could be no real reform so long as the chief posts were reserved for military medical men —The MASTER of ELIBANK replied The Secretary of State is not at present in a position to add anything to his answer to the honourable Member's question of June 17th last as to the manner in which the policy recently laid down can be carried into effect

Mr. KETTLE further asked whether the honourable gentleman was aware that some London Schools of Medicine were practically closed to Indian students, and whether he would take steps to see that persons qualified from such schools were not employed by the Government of India in its medical service —The MASTER of ELIBANK answered: The Secretary of State does not think it advisable to modify the existing arrangement under which the medical services of the Government of India are open to the profession generally

Steevens' Hospital

Mr HAZLETON [illegible] Ireland what acti[illegible] ensure that in fu[illegible] diseases such as [illegible] allocated to the c[illegible] other occupants of the ward —Mr. BIRRELL furnished the following reply: I am informed by the constabulary authorities that there has always been a separate ward in the hospital for ordinary infectious disease. A special ward has now been set apart for pulmonary tuberculosis.

THURSDAY, JULY 22ND.

Hospital Accommodation and the Royal Irish Constabulary.

Mr. HAZLETON asked the Chief Secretary to the Lord Lieutenant of Ireland whether members of the Dublin Metropolitan Police Force were permitted by their authorities, in case of illness, to select their own hospitals; whether this practice had been found to be prejudicial to the public service; whether he was aware that the Royal Irish Constabulary object to be sent compulsorily for treatment to Steevens' Hospital; and whether, in view of the fact that faith was a large factor towards recovery, especially in serious illness, orders would be issued giving the Royal Irish Constabulary a choice in the selection of hospitals.—Mr. BIRRELL replied: In case of illness the men of the Dublin Metropolitan Police are generally allowed to select the hospital to which they wish to be sent, and this practice has not been found to be prejudicial to the public service. I am not aware that the Royal Irish Constabulary object to be sent compulsorily to Steevens' Hospital, and the constabulary authorities see no reason for changing the existing practice which has worked well and harmoniously for many years.

Medical Inspection of Elementary Schools.

Mr. SUMMERBELL asked the President of the Board of Education to state the number of medical officers for elementary schools that had made reports to his department; when the Board's promised medical report on such inspection would be ready; and whether such report would indicate the reforms, if any, recommended by such medical officers.—Mr. RUNCIMAN replied: Reports have been received from 253 local education authorities. These reports will be dealt with generally in the Board's report, which will, I hope, be ready for issue in October.

Lunacy in Ireland.

Mr. VINCENT KENNEDY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he had seen in the last annual report of the inspectors of asylums in Ireland that the increase of lunacy in that country since 1880 was 10,949; had the increase for the last few years been continuous; would he say what the population of Ireland was in 1880, and the then number of lunatics, and also the population of Ireland for 1908 with the number of lunatics; could he say whether there was a similar increase, per head of the population, of this disease in any portion of the British dominions; and had the present Government considered [illegible] be done to cope with the increase of this almo[illegible] Mr. BIRRELL (by written answer) replied: I [illegible] referred to. I am informed by the inspectors of lunatics that in 1880, when the population was estimated at 5,202,648, the number of lunatics under care in Ireland was 12,982, and that in 1908, when the estimated population was 4,371,436, the number of lunatics under care was 23,931, an increase of 10,949. The increase has been continuous, but has tended somewhat to fall off in recent years. In England the increase in the registered insane between 1880 and 1907 was 52,971. In Scotland the increase between 1880 and 1908 was 8185. The Government has had before it a report dealing at length with the causes which, in the opinion of the inspectors, have contributed to swell the numbers of insane in institutions in Ireland. This report was presented to Parliament in 1906 (Cd. 3126).

The Metropolitan Asylums Board and Vaccination.

Mr. B. S. STRAUS asked the President of the Local Government Board whether he was aware that the hospital committee of the Metropolitan Asylums Board had made it a condition of tenancy of cottages on their property that every person residing therein should be vaccinated and revaccinated to the satisfaction of the medical officer; and whether such requirement had been sanctioned by the Asylums Board and by the Local Government Board.—Mr. BURNS furnished the following written reply: As regards the cottages on the small-pox hospitals estate of the [illegible] Green, Dartford, it has been made [illegible]son residing in them shall satisfy [illegible] [illegible]nall-pox hospitals that he or she is adequately protected against small-pox or shall consent to be vaccinated or revaccinated. The condition has been laid down by the hospitals committee of the managers, acting in their behalf, and in pursuance of the general policy agreed to by the managers and the Dartford sanitary authorities, and approved by the Local Government Board, for the protection of the neighbourhood of the small pox hospitals against the disease. It only applies to the cottages on this particular estate.

The Queen Alexandra Imperial Military Nursing Service.

Mr. BOULTON asked the Secretary of State for War why colonial training in large general hospitals was not accepted for the Queen Alexandra Imperial Military Nursing Service.—Mr. HALDANE wrote in reply: My honourable friend has been somewhat misinformed. Colonial training is accepted under the same conditions as training at home. It depends, however, on the opinion of the nursing board whether any particular nurse-training institute attached to a hospital is accepted for recognition

TUESDAY, JULY 27TH.

The By-laws of the Royal College of Surgeons.

Dr. V. H. RUTHERFORD asked the Secretary of State for the Home Department whether, in view of the attitude of the members of the Royal College of Surgeons, as shown in the memorial recently submitted, he proposed to sanction the new by-laws proposed by the Council of the Royal College of Surgeons.—Mr. GLADSTONE answered: The matter is still under my consideration.

Public Health in Croydon.

Mr. W. THORNE asked the President of the Local Government Board whether he was aware that, according to the report of the medical officer of health of the borough of Croydon for 1908, numerous cesspools in the Croydon rural district were in direct communication with water-bearing strata from which drinking-water was derived; that the local authorities did not attempt to put into operation the model building by-laws of the Local Government Board, which insisted on builders [illegible]king cesspools watertight; that cesspools in the district were allowed [illegible]uilt in defiance of the by-laws and in such a way as to encourage the direct flow of sewage under 20 or 30 feet of pressure into porous chalk; and that within the Croydon drainage areas there were in 1907, according to the borough engineer's report, 249 houses drained by cesspools which were capable of being connected with the sewers; was he aware that the medical officer had urged the necessity of safeguarding and extending the present water-supply; and, seeing that in January, 1908, the Croydon corporation laid the facts before the Local Government Board, would he say what action the Board had taken, or proposed to take, in the matter, and what assistance or advice the Board could give on the whole question of water-supply from the chalk.—Mr. BURNS replied: I am aware of the reports of the medical officer of health and borough engineer referred to in the question. I communicated with the rural district council and was informed that it had succeeded in persuading a considerable proportion of the owners concerned to connect their premises with the public sewers. I advised them as to the powers which they possessed for dealing with cases when such connexions had not been made, and I subsequently issued an order conferring upon them certain additional powers under the Public Health Acts Amendment Act, 1907. Further, I am causing some scientific investigations to be made with regard to chemical means of purifying chalk waters. I am fully alive to the importance of the subject.

The Inspection of Imported Meat.

Mr. WATT asked the President of the Local Government Board whether, in the regulations under the Public Health (Regulations as to Food) Act, it was the Customs officer whose duty it was to call in the medical officer of health to examine imported meat which the Customs officer considered unsound; if so, would he say whether that official was qualified by training to decide what meat was diseased and what meat was wholesome; and, if not, would he alter the regulations so that all meats imported were subjected to expert examination.—Mr. BURNS replied: It is the case that an officer of Customs would not be qualified by training to decide what meat is diseased and what meat is wholesome, but the regulations do not require him to do this. His duties under them are to require that certain classes of foreign meat, whether it is diseased or not, shall not be removed until they have been examined by the medical officer of health, and that other classes of foreign meat shall not be removed if by reason of facts brought to his knowledge or of representations made to him, he is of opinion that the meat requires examination by the medical officer of health. The responsibility for expert examination rests with the medical officer of health, and he may examine any foreign meat whilst it is still in the district, although it has not been detained by the officer of Customs It does not appear to me that any alteration of the regulations is necessary.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOOTH, S. H., M.B., B.S. Lond., has been appointed House Surgeon at the General Infirmary, Leeds.

BRUCE, JOHN MITCHELL, M.D., F.R.C.P. Lond., has been appointed to the Consulting Staff of King Edward VII. Sanatorium at Midhurst.

BUDD, ARTHUR, M.B., B.S. Durh., has been appointed Medical Officer of Health of Launceston (Cornwall).

BUXTON, DUDLEY W., M.D., B.S. Lond., M.R.C.P. Lond., has been appointed Lecturer to the newly created Lectureship in Anæsthetics at the Royal Dental Hospital of London.

CHALMERS, T. A., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Harris District of the county of Inverness.

DALLY, J. F. HALLS, M.D. Cantab., M.R.C.P. Lond., has been appointed Physician to the St. Marylebone General Dispensary, Welbeck-street, W.

DAWSON, B., M.D., F.R.C.P. Lond., has been appointed to the Consulting Staff of King Edward VII. Sanatorium at Midhurst.

FLINT, H. L, M.B., Ch.B. Leeds, has been appointed House Physician at the General Infirmary, Leeds.

HACKNEY, C., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hythe District of the county of Kent.

HALLOWES, K. R. C., M.B., B.Ch. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bellanagh District of the county of Cavan.

HUNT, ERNEST, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Kingsteignton District by the Newton Abbot (Devon) Board of Guardians.

KEYSER, CHARLES R., F.R.C.S. Eng., has been appointed Surgeon to the Cancer Hospital, London.

MACK, E. G., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

MOLE, HAROLD FREDERICK, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Surgeon to the Bristol Royal Infirmary.

OLDFIELD, CARLTON, M.D., B.S., M.R.C.P. Lond., has been appointed Honorary Surgeon to the Hospital for Women and Children, Leeds.

SAVAGE, WILLIAM GEORGE, B.Sc., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H., has been appointed Medical Officer of Health for the County of Somerset, and Medical Officer of Schools to the Somerset County Council.

SCOTT, SYDNEY, M.S. Lond., F.R.C.S. Eng., has been appointed Surgeon for Diseases of the Ear and Throat at the National Hospital for the Relief and Cure of the Paralysed and Epileptic, Queen-square.

SINCLAIR, HAROLD WEIGHTMAN, M.D. Lond., L.R.C.P. Lond., M.R.C.S., D.P.H. Lond., has been appointed School Medical Inspector by the Gloucestershire Education Committee.

SMITH, GEORGE MUNRO, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the Bristol Royal Infirmary.

SPEARMAN, R., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Clacton-on-Sea District of the county of Essex.

THOMSON, H. A., M.D., F.R.C.S. Edin., has been appointed Professor of Surgery in the University of Edinburgh.

WALTERS, CHARLES FERRIER, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the Bristol Royal Infirmary.

WOODSEND, R. N., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM UNIVERSITY.—Lecturer on Pathology and Bacteriology.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CARSHALTON, SURREY, CHILDREN'S INFIRMARY.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Assistant Surgeon.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board and lodging. Also Surgeon-in-Charge of the Branch Dispensary, unmarried. Salary £80 per annum, with board and lodging.

CHESHIRE, CROSSLEY SANATORIUM, Delamere Forest.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistant.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon. Salary at rate of £60 per annum, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board, apartments, and laundry.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum.

GERMAN HOSPITAL, Dalston, N.E.—Honorary Anæsthetist.

HARRIS PARISH.—Medical Officer. Salary £126, with house.

JERUSALEM, BRITISH OPHTHALMIC HOSPITAL.—Assistant Ophthalmic Surgeon. Salary £300 per annum, with house.

LANCASTER, ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEEDS UNION, IN-DOOR INSTITUTIONS, Beckett-street.—Assistant Medical Officer. Salary £120 per annum, with board, washing, apartments and attendance.

LIVERPOOL INFIRMARY FOR CHILDREN.—House Surgeon for six months. Salary £30, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £80 per annum, with board, residence, &c.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer, also Assistant Resident Medical Officer. Salary in each case £50 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, &c.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, with all found. Also Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with all found.

SALFORD UNION INFIRMARY.—Senior Assistant Resident Medical Officer. Salary £150 per annum, with apartments and attendance, without rations.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.

SHOREDITCH INFIRMARY, Hoxton-street, N.—Second Assistant Medical Officer. Salary £100 per annum, with rations, washing, and apartments.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WALLINGFORD, BERKS COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.

WIGAN INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with rations and apartments.

THE Chief Inspector of Fa [illegible] ster; at Tralee, in [illegible] in the county of [illegible]

THE Secretary of State for the Home Department gives notice of a vacancy under the Workmen's Compensation Act, 1906, for the Sheriffdom of Stirling, Dumbarton, and Clackmannan.

Births, Marriages, and Deaths.

BIRTHS.

BOKENHAM.—On July 26th, at Highview, Wokingham, Berks, the wife of Thomas Brandon Bokenham, M.R.C.S., L.R.C.P., L.S.A., of a daughter.

MILLIGAN.—On July 26th, at Upper Brook-street, W., the wife of W. Anstruther Milligan, M.D., of a son.

MARRIAGES.

BAS[illegible]

WHITE—TICHENER.—On the 22nd inst., at St. George's, Hanover-square, by the Rev. David Anderson, Rector of the parish, Charles Francis Orr White, M.R.C.S., L.R.C.P., son of the late John Orr White and Mrs. Orr White of Sunnyside, Norwood, to Edith Nina, younger daughter of Mr. Edward Tichener of Heath View, Walton, Epsom.

DEATHS.

PHILLIPPS.—On July 27th, at Savoy Mansions, W.C., Alfred Phillipps, M.R.C.S., aged 68.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

accurate method will be by having bacteriological examination of the lochial discharge," or "offensive lochia"; or "the rise of temperature above 100·5°F., persisting for more than 48 hours, should be regarded as indicative of infection, unless it can be clearly demonstrated to be due to some other cause. If the rule were adopted that all such cases should have a leucocyte count, uterine cultures and blood cultures, a positive result might clearly determine which febrile cases are septic"; while, in opposition to such a rigorous criterion, some said in reply to the question, "Have you any suggestions as to general adoption of a standard for use in maternity hospitals to serve as an index of septic morbidity?" "No. Every one who is fit to be in charge of a lying-in hospital is capable of deciding this, and a standard is, in my opinion, useless," and another reply to the same query was "No. The diagnosis of septic morbidity is usually easy enough to the unprejudiced observer." The majority of the maternities, however, regarded pulse, and especially temperature, as the best and most easily available evidence of puerperal morbidity. In a paper, a Plea for the Early Recognition and Treatment of Puerperal Fever, published in THE LANCET of August 22nd, 1896, I pointed out that the early symptoms of puerperal infection were elevation of temperature and quickness of pulse; and, while I mentioned certain intercurrent non-septic conditions which might raise the pulse and temperature after delivery (giving, at the same time, the diagnosis between them and cases of puerperal infection), I wrote: "I think, then, if we exclude conditions such as I have mentioned, and which, after all, are not very common, we are warranted in concluding that it is, on the whole, rare to have fever and quick pulse in the first five or six days after labour from any other cause than infection." The Committee on Puerperal Morbidity appointed by this Association made the following recommendations:—

1. That irregularities in temperature occurring during the 24 hours following delivery should not be considered for statistical purposes.
2. That as the time puerperal patients remain in hospital varies in different institutions, statistical tables should be formed from the records up to the end of the eighth day after delivery.
3. That statistical records should relate only to patients delivered after the sixth lunar month of pregnancy. (It is recommended that cases delivered before the end of the sixth lunar month of pregnancy should be tabulated separately.)
4. That records of pulse and temperature should be taken twice a day in every case, the following precautions being observed:—
   (a) The temperature to be taken night and morning; if possible, between the hours of 7 and 9 A.M. for the morning, and between the hours of 4 and 7 P.M for the evening record.
   (b) The temperature to be taken in the mouth.
   (c) The thermometer to be kept in the mouth for four minutes.
5. That the title of puerperal morbidity should include all fatal cases, and also all cases in which the temperature reaches 100° F. on any two of the bidaily readings from the end of the first to the end of the eighth day after delivery.
6. That all cases which according to this convention are "morbid" should be tabulated in statistics, the probable cause of the illness and its duration in days being given.

This may be called the British Medical Association standard. On the other hand, at the Rotunda Hospital, in deciding what is the morbid indication, a more certain criterion in the Master's opinion is adopted, and regard is had both to pulse and temperature. If a patient's temperature and pulse, taken twice daily, rise above 99° F. and 90 respectively on three consecutive occasions, counting from the beginning of the second day to noon on the eighth (the time normal cases are discharged), she is regarded as being morbid. Abortion cases are included, but patients dying without fever are excluded. If a patient's pulse and temperature exceed these limits she is not allowed to leave the hospital until they fall to normal for three consecutive takings, and should a patient be retained in hospital after the eighth day and then show any morbidity she is reckoned in the morbidity statistics. Temperature and pulse must together rise above these limits and remain above them for three consecutive bi-daily takings, or, to put it another way, for 24 hours, before a case is regarded as morbid, the temperature being always taken in the mouth. In this way transitory and unimportant elevations of pulse and temperature (to which it would be unfair to apply the term "morbid") are excluded, and, further, the irregularities of pulse and temperature often met with in the 24 hours after delivery are also excluded. Now, with the exception of certain transitory nervous influences and the presence of intercurrent maladies wholly independent of the puerperal state, in the great majority of cases as defined in this way by the Rotunda standard of morbidity, the cause is infection by micro-organisms or by the toxins of retained lochia. So far back as 1891, in a paper on Puerperal Fever, its Nature, Prevention, and Treatment,[4] I used these words: "The experience I have gained at the clinic in diseases of women at the Royal Hospital and in private practice has brought prominently before my attention the fact that many of the chronic ailments of women are traceable to some feverish attack which sets in after parturition." Subsequent knowledge, acquired in the Belfast Maternity Hospital and in the gynæcological ward of the new Royal Victoria Hospital, has shown me that a large number of those affections of an inflammatory nature, to which we give the term "pelvic inflammatory disease" in women, are cases of puerperal infection which, when they occur in a maternity institution, cause its "morbidity," and which, with a more complete aseptic and antiseptic technique, will in time be banished from lying-in hospitals as well as from private practice. These are the cases of child-bed illness which so often ruin health, which cause an immense amount of invalidity and chronic suffering, and which, it is estimated, constitute at least one-third of hospital gynæcological patients. When I studied at the Rotunda Hospital no clinical thermometers were in use; it was in the year 1882 that they were first introduced, and, as pointed out by Dr. E. Hastings Tweedy,[5] the notebook of the assistant master of that period, which I have inspected, shows that of 99 cases in which the temperature was taken, in no less than 50 per cent. there was morbidity, nine had temperatures of 105° F., and 18 temperatures of 103° F., yet the Master reported the condition of the hospital of that date as having been "particularly healthy."

Now, let me contrast the year 1884 (when the British Medical Association met last in Belfast) with the present time as regards mortality and morbidity in two Irish maternity hospitals. In the year 1883–84, from Nov. 1st to Oct. 31st (Arthur Macan, Master), 1109 patients were confined in the Rotunda Hospital with nine deaths, and of these 1109 there were 281 in whom the temperature was over 100·4° F. and the percentage of morbidity was 25·34. In the last year of which we have records, from Nov. 1st, 1907, to Oct. 31st, 1908 (E. Hastings Tweedy, Master), 2060 patients were confined in the Rotunda Hospital with only seven deaths, and in only 126 was the temperature over 100·4° F.—that is, a percentage morbidity of 6·12. Of the seven deaths, only three were due to infection (one was admitted infected, another had been examined outside, and the third was a case of incomplete abortion with a fœtid discharge on entering hospital). It will be seen that, with nearly double the number of patients, there is less than half the number of actual morbidities, and also fewer deaths. As the present Master of the Rotunda points out in a letter to me, these results are better than the figures actually show, because—

1. Many patients formerly left the hospital on the fifth day, an occurrence now almost unknown.
2. The old thermometers did not register under six minutes, and, as a result, they were often taken out too soon. Further, they were placed in the axillæ and not in the mouth, as at present—a method which gives a much more accurate record.
3. The present nurses at the Rotunda are much better educated than those of bygone days; they live in the house and are more thoroughly supervised, and, as a consequence, more reliable observations are made.

It is very interesting to note how the "morbidity" is gradually falling in the Rotunda, as shown by the following table. The estimate is made according to the Rotunda method:—

Years.	Morbidity.
1903–04	10·70 per cent.
1904–05	6 67 ,,
1905–06	4·33 ,,
1906–07	3 99 ,,
1907–08	3 64 ,,

In former years in Belfast there were so-called epidemics of puerperal fever in our maternity hospital, necessitating its being closed on several occasions, and numerous cases which would now be classified as examples of "morbidity." At present such a state of affairs is unknown, and in our new, much-enlarged hospital, where both students and pupil midwives are trained, we had during 1907 and 1908 12 deaths out of 1355 deliveries, and of these only four deaths were due to puerperal infection. (In one the patient had been in labour for 24 hours, attended by an unqualified woman before admission; another, with a contracted pelvis, had been in labour several days before admission; and in a third, the child was born in an *advanced state of decomposition.*) Further, in 1908 our cases of morbidity from every cause, estimated on the standard that the occurrence of one temperature of 100·4° F. indicated a pathological condition, were 9·42 per cent., which is distinctly lower than at Hofmeier's well-known clinic. Again, owing to the aseptic and antiseptic management of the mother during her confinement, as well as by the adoption of special prophylaxis in the care of the child, cases of ophthalmia neonatorum in both maternities are now extremely rare.

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[4] Dublin Journal of Medical Science, May–June, 1891.
[5] Rotunda Practical Midwifery, p. 36.

These statistics show the present condition of obstetric medicine as practised in two Irish maternities—the Rotunda in Dublin, the largest midwifery institution in the British Empire, and in the Maternity Hospital, Belfast, in both of which students and midwives receive practical training. How have such splendid results been brought about in getting rid of that terrible scourge so often termed puerperal fever and in reducing the number of cases of morbidity? Simply by the careful and thorough carrying out of a series of details evolved step by step in the great campaign against infective microbes.

1. By recognising, as was so well taught by the great Viennese obstetrician, Boer[6] (who really acquired the knowledge largely when visiting France and this country), that, in at least 75 per cent. of the cases, labour is a natural process not needing interference, and that its tendency is to prevent infection, and that our duty is to follow and aid it, and to interfere only when the resources of nature fail to protect the interests of mother or child The uncalled-for use of the forceps, early *rupture of the membranes, douching*—unless under very special circumstances—and the improper management of the third stage of labour are things of the past in properly conducted maternities.

2. By the thorough application of the most minute surgical cleanliness as regards patient, nurse, and doctor during labour and the puerperium.

3. By the adoption of Credé's teaching, enunciated so far back as 1886, when he wrote, "Even the simplest manipulation may cause infection. It should, therefore, be laid down *and taught as a fundamental principle that internal examination* of parturient women should be altogether avoided or restricted within the narrowest possible limits. It can be *very well replaced by external examination.* To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions."

4. By the immediate suture of any laceration occurring during the process of labour.

In my opinion, the most scrupulous surgical cleanliness in all manipulations, the thorough sterilising of every article coming in contact with the patient, the greatest possible employment of the external methods of examination, and the strict limitation of internal examinations to cases in which the external plans have failed to give the necessary information, combined with the use of rubber gloves (recollecting, however, that sterile fingers, even when covered with recently boiled rubber gloves, may carry in infective bacteria unless the utmost care is taken to prevent contact with the inner surface of the labia and borders of the hymen), despite F. Ahlfeld's views,[7] these are the most important elements in the technique of a modern maternity hospital for the prevention of septic mortality and morbidity.

Professor Hofmeier,[8] estimating the puerperal morbidity on the basis that any case which shows even for once a temperature of 100·4° F. must be regarded as pathological, has recently pointed out that the percentage of morbidity at the Würzburg clinic was 11·48 per cent., while Scanzoni found that out of a series of 157 precipitate births, of 97 women who were never touched vaginally by any examining finger at all 21·6 per cent. had a rise of temperature of between 102° and 104° F.; while of 112 parturients who were confined without any contact from without, 11·5 per cent. had a rise of temperature up to 102·5° F., which it is presumed arose from infection. From such facts the conclusion might naturally be drawn that, do what we will, the woman who is confined can infect herself. But, on the other hand, it may be said that some of these supposed examples of auto-infection may *have arisen from external sources after delivery, during the* puerperium, as it was in this way that the morbidity of 10·7 in 1903–04 at the Rotunda had its origin in great part after the birth of the children. No doubt a very small porportion of septic cases may, during the lying-in period, seem to be examples of auto-infection. I have seen a case where in a primipara a rise of temperature was proved to be owing to the infection of the uterus with the pneumococcus, and, what was still more curious, the baby suffered from a broncho-pneumonia. In another case a lady was infected from a septic phlebitis of the veins of the vulva which were inflamed before her confinement. The Master of the Rotunda has had similar cases, but that such so-called cases of "auto-infection" must be very few in number is clearly proved by the fact that the more thorough and complete is our aseptic technique the less is the morbidity. Further, the very remarkable gradual fall from year to year in the number of the morbidity cases at the Rotunda—as shown in the statistics I have quoted—is totally against the view that auto-infection is anything but a rarity in well-conducted maternities. It is a remarkable fact that puerperal infection (mortality or morbidity) is very uncommon among savage people, or among the patients confined on their way to a maternity; its risk seems to increase with the amount of interference, for in a maternity the morbidity is always less in those normally delivered than in those requiring assistance—a fact which shows how necessary it is, even in such institutions, to strive to improve the aseptic technique in operative cases.

The following statistics showing the mortality in England, Scotland, and Ireland, kindly supplied me by the Registrar-Generals of these countries, indicate that the puerperal infection is still a cause of many deaths—a fact all the more remarkable in face of the results in maternities, and when one considers how typhus fever, small-pox, enteric fever, and (outside Ireland) tuberculosis have all declined so markedly during the past quarter of a century:—

Deaths from Puerperal Sepsis.

ENGLAND AND WALES.

Year.	Numbers.	Death-rate to 1,000,000 females living.
1901	2079	122
1902	2003	118
1903	1668	97
1904	1654	94
1905	1734	98
1906	1640	93
1907	1465	81

In England and Wales the numbers were for the year 1884 2580, being a death rate of 186 per 1,000,000 females living.

SCOTLAND

—	1904	1905	1906
Puerperal septicæmia, sapræmia ...	113	124	123
Puerperal pyæmia	2	5	10
Puerperal fever (not otherwise defined)*	126	119	130
Total	241	248	263

* Including puerperal fever, puerperal peritonitis, puerperal perimetritis, puerperal endometritis, puerperal phlebitis, &c.

The statistics for 1907 are not yet available. In 1884 the deaths from "puerperal fever" were 336.

IRELAND.

The death rate represented by deaths from puerperal septic diseases in Ireland during the year 1905 was 2·21 per 1000 births registered; during 1906 it was 2·26; and during the year 1907 the rate was 1·60 per 1000 births registered. In 1884 the deaths from puerperal fever and phlegmasia dolens represented a rate of 2·57 per 1000 of all births registered in that year.

(B) *Operative Midwifery.*

During the last quarter of a century the employment of antisepsis and asepsis and the experience derived from abdominal surgery, due so largely to gynæcologists, have exercised a marked influence upon operative midwifery. *This is well seen in our present knowledge of the patho*logy and treatment of extra-uterine pregnancy, in the revival of symphysiotomy and its more recent modification must care for the child. Now, in reference to the latter he must concern himself, not only with those factors that promote and favour antenatal life, but he must also have a thorough acquaintance with the means for preserving the life and promoting the growth and welfare of the newborn infant. The ideal we must all aim at in our practice, as I pointed out at the beginning of this address, is not alone the absence of *mortality*—that is, a living mother and a living child—but, at the same time, the avoidance of *morbidity*—that is, a healthy mother and a healthy child. If this ideal-it to be realised it is absolutely essential—above and beyond the expert aid and advice afforded by the skilled obstetrician—that there should be spread more and more among the people the knowledge of motherhood. We must train the children in the public schools as to what is essential for the proper understanding of life, so that they may realise how often Browning's line is true:—

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[6] Geschichte [illegible] Wiener und [illegible] Hofrat [illegible] 909

> "Ignorance is not innocence but sin."[14]

Those who are brought face to face with the clamant public health problems of our great cities—and in the boroughs and urban districts of England and Wales there were 77 per cent. of the aggregate population in 1901 as compared with 50 per cent. in 1851—must feel that if we are to succeed in making a healthy nation, if we are to get rid of that physical degeneration which is so prevalent, and if we are to regain our ability and our energy—qualities which are so essential for any country in the present fierce struggle for existence, and so much of which has been lost through crime, ignorance, and apathy—we must cease to neglect the mothers of our people. No method will ever give us physical betterment which does not exercise a beneficial effect upon that sex which is the most dominant element in the development of the race. The more in every respect we elevate motherhood, the more we dignify home and the more we raise our race.

Now, in order to spread the knowledge of what is really essential for good motherhood among the poor—especially of our crowded cities—we must insist that at the public schools the laws of health and hygiene are taught, and in connexion with these schools the establishment in Ireland recently of the Girls' Guild of Good Health (which is in affiliation with the Women's National Health Association of Ireland) is a distinct step in advance. The girls banded together in these guilds pledge themselves to be as healthy as possible in body and mind. We must also try to reach a class hitherto totally neglected—the poor expectant mothers—and to guide them in reference to such questions as food, occupation, housing, and temperance—factors so important not alone to themselves but to their unborn children, for it is well known that four-fifths of the value of an infant's start in life and its chance of living depend upon the proper nutrition of its mother during her pregnancy. Truer words were never uttered by any statesman than those spoken by the President of the Local Government Board when, in a discussion in reference to the administration of his department in the House of Commons on June 17th of this year, he said: "It was the business of every employer of labour, of every husband and wife, and of every department and authority concerned in the future of the race, to see that the prenatal conditions of the child were vastly improved."

In his interesting address last week at Leeds on Child Mortality in Relation to the Health of the State, Dr. George Newman, Chief Medical Officer of the Board of Education in England, said that future measures of preventive medicine must start from the child and must deal with the home. Now, while both these means are admirable, unless the antenatal conditions are improved, even these efforts, good as they are, will, in many cases, come too late.

Such aid, in addition to useful hints on various points, might in some cases take the form of good nourishment, especially during the latter half of gestation, outfits ("maternity bags"), &c., for those who do not enter lying-in hospitals. In some places this help can be, and indeed is, afforded through voluntary philanthropic agencies, such as guilds of lady visitors, mothers' welcomes, babies' clubs, Samaritan funds, and maternity nurses; but looking at the way France, with her low birth-rate (and we must not forget that in England and Wales only two children are now born against the three of 30 years ago), has been compelled to face the problem, it is a question whether optional powers (as in Mr. Robert Harcourt's Necessitous Mothers' Assistance Bill, introduced this session) should not be given to local authorities to levy a special rate for this purpose.

I have shown that in modern times properly conducted maternities have banished that great scourge formerly styled puerperal fever, and it is to the credit and glory of obstetric medicine that it was Pierre Budin, professor of midwifery in the University of Paris and director of the Clinique Tarnier, who in 1892 started a similar revolution in the interest of the new-born child by establishing the first fully developed "Consultation for Nurslings," or School for Mothers. At a great congress of artisans in Paris in 1892 Budin said: "Your country has need of all her children, and humanity demands that we should spare no effort on their behalf." Shall we not repeat these words in every part of our Empire? Here in Belfast we are making a beginning, for in connexion with the infant mortality committee of the Belfast branch of the Women's National Health Association of Ireland, that splendid organisation established by Her Excellency the Countess of Aberdeen, whose magnificent work on behalf of public health in Ireland is known all the world over, there has been started a series of schools for mothers called "babies' clubs." They now number four, situated in different parts of the city, and they are the first of the kind in Ireland, and are doing an immense amount of educative work in spreading the light in regard to good motherhood and in solving the infantile mortality problem. These admirable organisations are in close touch with the Belfast Maternity, the two children's hospitals, the dispensary midwives, the St. Vincent de Paul Society, the Nurses of Charity, and numerous other philanthropic societies of our city. They are managed by a small band of most devoted ladies whose great aim is to afford practical help to poor, necessitous, and inexperienced women, and to bring before them the knowledge necessary for good motherhood. They show them how properly and hygienically to bathe, clothe, and dress babies, and how to laundry their garments. They encourage in every possible way the mothers to nurse their children, but in case of insufficiency or of total failure in this respect they supply them with milk which comes from a dairy where, by the tuberculin test, cows suffering from tuberculosis are excluded, where modern clean Danish methods are used with rapid cooling of the milk, which is placed in sealed bottles. This milk, following the method of the famous Copenhagen Milk-supply Company, is neither pasteurised nor sterilised, and by an arrangement with the proprietor of the dairy it is sent direct to the homes of the women whose children, in the opinion of the lady doctors who attend the clubs, really require it; but this milk is given only on condition that the infants are brought every week to the clubs so that it may be judged how they are progressing. These babies' clubs are thus doing a threefold duty: (1) they are educating the mothers; (2) they are supplying, when needed, a pure milk; and (3) they are affording an object lesson, even before the passing of Mr. Burns's Milk and Dairies Bill, as to the production of a natural, clean, non-tuberculous milk. Since the opening of the first club in February, 1908, up to July 1st, 1909, 889 children have passed through these institutions, and 5640 quarts of pure milk have been distributed. In the summer of last year—July, August, and September—I am informed, not a child receiving this milk died. To the young expectant mothers hints are given as to the care of themselves, and they are advised as to making provision for their confinement.

Further, from a public health point of view, the Midwives Act of 1902 should be made to apply to the whole of the United Kingdom, and not, as at present, to England alone. Ophthalmia neonatorum, a preventable malady, which is the cause of at least one-third of the cases of permanent and hopeless loss of vision in our blind institutions, should be constituted a notifiable disease; and provision should be made for the early removal of cases of puerperal infection among the poor to hospitals or institutions where the results of the latest scientific research can be made available, and effective treatment can be employed.

(3) *Problems still Unsettled, requiring for their Solution the Combined Efforts of the Obstetrician, the Biochemist, and the Clinical Pathologist.*

We have accomplished much in the last quarter of a century, but there are still many questions in obstetrics that await solution. How little we yet know as to the real nature of menstruation! Is dysmenorrhœa a disease, or is it a symptom of many underlying conditions? What is its relation to sterility? What a field the diseases of pregnancy afford to the careful scientific investigator! We speak of the toxæmias of pregnancy, but what are these toxins and how and where are they elaborated? What are the factors in *the production of herpes* (*hydroa*) *gestationis*? What really is eclampsia? How does tubal pregnancy occur? What is the cause of chorion-epithelioma? How do diseases of the placenta arise? Why are women at childbirth so susceptible to bacterial infection? Why do the bacteria travel at one time along lymphatics, at another in the course of blood-vessels? We know that puerperal infection is caused by micro-organisms, but how do these microbes become virulent and in what way do they lose their malignant influence? Has season, race, or the predisposition (lowered resistance to infection) of the individual attacked anything to do with their power? In other words, while we know a great deal about the seed we are still largely in the dark as to the soil. No doubt operative interference has accomplished much in puerperal infection, especially in cases of localised abscess, pus tubes, and intense peritonitis limited to the pelvic organs, and occasionally in ligation or excision of thrombosed veins in puerperal pyæmia (as has been done in infected thrombi in mastoid disease);[15] still, when severe puerperal infection is present, can we yet boast of having advanced much beyond the view of William Hunter, who said, "Treat these in what manner you will, at least three out of every four will die." Have our surgical measures accomplished much in the very severe types of puerperal infection? Speaking for myself, in the most fatal and formidable form of puerperal infection—that due to the streptococcus pyogenes—I have seen little advantage so far from surgical interference. The serum treatment of puerperal infection has also been disappointing clinically; and, indeed, with the exception of the antidiphtheritic and the antitetanic serums, is the preparation of the various antibacterial serums based on exact scientific principles? Certainly no one should use an antibacterial serum "except where, as in the case of an antidiphtheritic serum, the pathologist is prepared to give him definite information with respect to the amount of protective substances in the serum."[16] Is the future of these severe puerperal infection cases, so far as treatment is concerned, not with that school established by one who received his early *education in Belfast, Sir Almroth Wright*, and his pupils, whose work is revolutionising every branch of medicine, and who from each case of puerperal infection may elaborate the proper vaccine-therapy?

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[14] The Town Album.

CONCLUSION.

We must invoke in the future, more and more, the help of the physiological chemist and of the clinical pathologist in the clearing up of the many unsolved problems of obstetric medicine, and they must work hand-in-hand with the practical obstetrician. It is in the laboratory situated in the maternity hospital that investigators, I am convinced, will help the practical obstetrician to unravel in the years to come many of these mysteries that still confront us, but they must look at these problems both from the clinical as well as from the biochemical and from the pathological side, and, as a result of the combined efforts of all these workers, may we soon be able to say—

"There's a fount about to stream,
[illegible]
Men of thought, and men of action,
Clear the way!

Once the welcome light has broken,
Who shall say
What the unimagined glories
Of the day—
What the evil that shall perish
In its ray?
. . . . . .
. . . . . .
And our earnest must not slacken
Into play.
Men of thought, and men of action,
Clear the way!

Lo! a cloud's about to vanish
From the day,
And a brazen wrong to crumble
Into clay.
Lo! the right 's about to conquer;
. . . . . .
. . . . . .
Men of thought, and men of action,
Clear the way!" —*Charles Mackay.*

The Hunterian Lectures

ON

MALFORMATIONS OF THE HEART.

Delivered before the Royal College of Surgeons of England on March 8th, 10th, and 12th, 1909,

By ARTHUR KEITH, M.D. Aberd., F.R.C.S. Eng.,

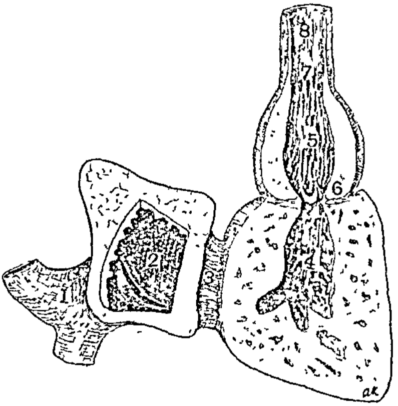
HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND CONSERVATOR OF THE MUSEUM.

LECTURE I.

Delivered on March 8th.

Mr. President and Gentlemen,—Although it is 43 years since the last edition appeared, Peacock's treatise on "Malformations of the Human Heart" still remains the standard English work on this subject. It is as fresh as the day on which it was written, for it is founded on accurate personal observation by the bedside and in the post-mortem room. After his death in 1882, the collection of malformed hearts which he had treasured and studied was presented to this Museum and forms a very important part of the series of specimens which I now bring before you as the subject matter of these three lectures.

Fig. 1.



The four primary chambers of the heart, from a specimen (heart of Xiphias gladius) in the Museum of the Royal College of Surgeons of England. 1, Sinus venosus; 2, auricle laid open showing the venous valves guarding orifice of sinus; 3, auricular canal; 4, ventricle; 5, bulbus cordis; 6, ventricular orifice of bulbus; 7, aortic orifice of bulbus; 8, common ventral aorta leading to gills.

Our knowledge of the heart has advanced since Peacock's time. One of the greatest discoveries of that period is now only dawning, but every year increases our assurances of its truth—viz., that there is a fourth part or chamber in the mammalian heart which hitherto we have taken no cognisance of. The three parts of the mammalian heart at present recognised are (1) the sinus venosus, (2) the auricles, and (3) the ventricles. The fourth part is the bulbus cordis, which is so well seen in the shark's heart. (Fig. 1.) It is usually supposed that the bulbus cordis has completely disappeared from the mammalian heart, but now we have good reason for believing that, in the same manner as the sinus venosus has become incorporated in the right auricle, the bulbus has become included in the right ventricle, forming that part loosely termed its infundibulum.[1] The credit of this discovery belongs to Alfred Greil,[2] prosector in the University of Innsbruck. He traced the fate of the bulbus by a prolonged study of the hearts of developing vertebrates. Independently of him I had reached the same conclusion from an investigation of malformed human hearts and of the hearts of vertebrate animals. Professor Peter Thompson[3] has recently identified and described the development of the bulbus in an early human embryo. A large number of the very commonest malformations of the human heart are due to an arrest of the process which ends in the incorporation of the bulbus cordis in the right ventricle. The great majority of cases of congenital stenosis of the pulmonary artery are of this nature.

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[15] American Journal of Obstetrics and Diseases of Women and Children; paper by J. Whitridge Williams, May, 1909, p. 753.

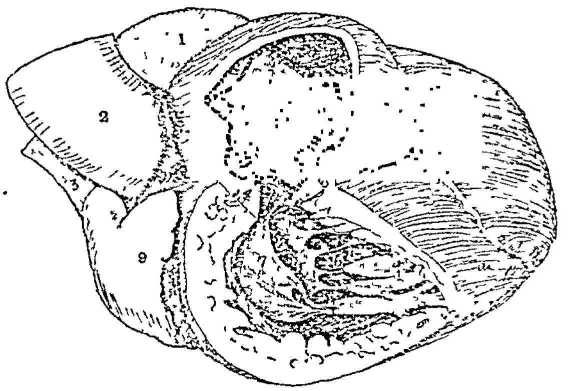
[16] A Criticism of the Foundations of Serum-Therapy, by Sir A. E. Wright, in Studies on Immunisation, 1909

The 55 malformed hearts in the College Museum form the subject matter of my discourse, but my inferences are founded on a wider basis. Thanks to the liberality and courtesy of those who are responsible for the management of the museums of the metropolitan medical schools, I have had an opportunity of examining the specimens in their collections. Through Professor T. Wardrop Griffith—a leading authority on malformations of the heart—I have been able to examine the splendid collection in the museum of the University of Leeds. From these various sources and from my own dissections a series of over 270 specimens is included in the material with which I now deal.

1. SUB-DIVISION OF THE RIGHT VENTRICLE.

The first malformation I propose to consider is the comparatively rare one usually described as sub-division of the right ventricle. There are three specimens in the museum, and Dr. John Hay has recently presented a fourth. The heart, however, which I propose to describe as the type is one which Dr. Percy Kidd gave me the opportunity of examining. It is shown in Fig. 2. The body of the right ventricle is separated from its infundibulum by a muscular partition, the centre of which is perforated by a foramen large enough to take the little finger. The margin of the foramen is composed of fibrous tissue. The infundibulum is dilated and larger than in the normal heart. The semilunar pulmonary valves are normal. On the septal wall of the infundibulum is seen an important fibrous raphe extending from the semilunar valves above to the constriction or ostium infundibuli below. Below the ostium, in the position of the pars membranacea septi, there is a small foramen—the interventricular—by which blood in the body of the right ventricle could have passed into the left ventricle, or *vice versâ*, during life. There are 19 hearts with malformations of this nature in the series which I have examined. Two of these in the College collection are peculiar; the muscular partition between the two parts of the right ventricle is wholly muscular, and in one the infundibular chamber has reached the apex of the heart. The normal heart shows a muscular constriction at the junction of body and infundibulum of the right ventricle, a fact to which Peacock had drawn attention. The moderator band, which we now know to be a muscular bridge for the conduction and protection of the right septal division of the auriculo-ventricular bundle, forms part of the musculature of the constriction.

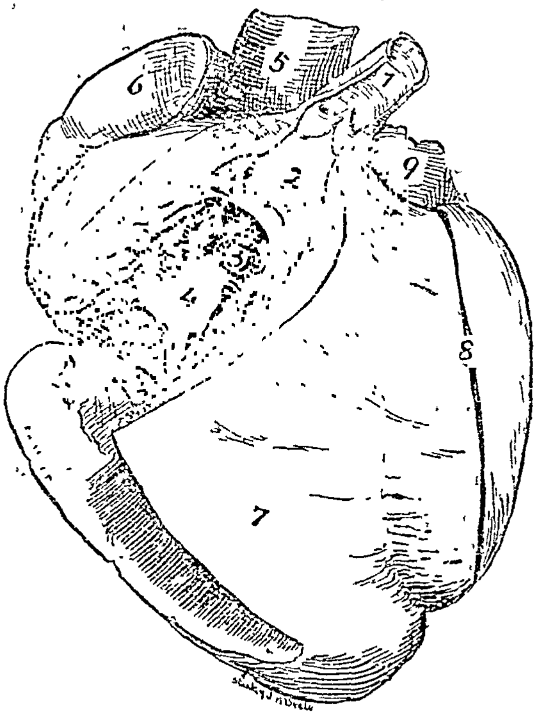
FIG. 2.



Heart of a man, aged 20 years, who died after two months' illness from acute infective endocarditis, showing subdivision of the right ventricle. 1, pulmonary artery; 2, aorta; 3, superior vena cava; 4, 5, on margins of lower ostium infundibuli—the interventricular orifice is seen between 4 and 5; 6, body of right ventricle; 7, tricuspid valve; 8, left ventricle; 9, right auricle, A, right infundibular band; B, left infundibular band.

The majority of patients with this malformation of the heart live to adult age; indeed, in some the condition is only discovered after death. The symptoms depend on the size of the ostium infundibuli. In some it measured only from 2 to 4 millimetres in diameter, leading to early death, but in the greater number the orifice measured from 6 to 15 millimetres in diameter. The maximum intensity of the systolic bruit heard in such cases lies to the right of the sternum below the insertion of the fourth costal cartilage. In nine cases there was an interventricular foramen present (see Fig. 2), so that the blood in the body of the right ventricle, obstructed by the narrow ostium infundibuli, might also escape into the left ventricle. In four cases there was also a union or stenosis of the pulmonary semilunar valves; in three the ductus arteriosus was patent and in two the foramen ovale. In quite a large number the fibrous margin of the ostium infundibuli was covered by vegetations—a fact which led to the inference that the fibro-muscular partition between the infundibulum and body of the right ventricle is not a malformation but a cicatricial constriction. It is well known that the right side of the heart becomes more liable to endocarditis than the left if there are obstruction and hypertrophy on that side. The endocarditis is a result, not a cause, of the ostium infundibuli.

FIG. 3.



Heart of a girl, aged seven years, showing arrest in the expansion of the infundibulum (drawn by Mr. Stanley J. A. Beale). 1, Pulmonary artery [illegible] separated from body of right [illegible] partition which is perforated [illegible] 3, interventricular orifice; 4, [illegible] auricle; 7, right ventricle; 8, left ventricle; and 9, left auricle.

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[1] The author has dealt more fully with the nature of the bulbus cordis and its malformation in Studies in Pathology, edited by William Bullock, 1906.

[2] Morph. Jahrb. 1903, Band xxxi., p. 123. See also Hertwig's Handb. der vergleich u. experim. Entwickelungslehre der Wirbeltiere, Parts 4, 5, 14, 15, 1903.

[3] Journal of Anatomy and Physiology, 1907, vol. xli., p. 159.

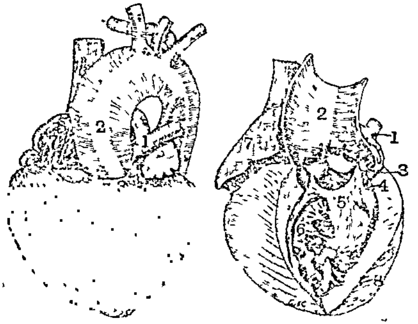
2. CASES IN WHICH THE DEVELOPMENTAL EXPANSION OF THE INFUNDIBULUM IS ARRESTED.

We now pass on to a group of cases which occur much more frequently than those just considered and are usually classified under the term "congenital pulmonary stenosis" In reality they represent a condition in which the arrest in the development of the infundibulum is much more complete than in the last series. The heart shown in Fig. 3 may be taken as representative of this group—hearts in which there has been an arrest in the developmental expansion of the infundibular cavity. In the type specimen (Fig. 3) the infundibular cavity is fusiform in shape, measuring 12 millimetres from the orifice by which it communicates with the body of the right ventricle (the ostium infundibuli) to the pulmonary valves above. The lining of the infundibular cavity has the appearance of ground glass because the subendocardial tissue is fibro cellular in texture, and embryonic rather than inflammatory in its microscopic structure. The ostium infundibuli may be as well marked as in the type specimen (Fig 3), or it may be indicated merely by a circular thickening of the endocardium, or even that indication may be absent. The pulmonary valves in less than half of the hearts of this nature which I have examined—44 in number, of which 16 are in the College collection—were *fused to a greater or less degree, the condition of arrest of* the infundibulum being thus accompanied by a true pulmonary stenosis. In more than half of these cases—I do not give the exact numbers because in some of the specimens examined the heart was insufficiently opened—an interventricular foramen was present; the size of that foramen was variable. In only a small percentage was there an open condition of the foramen ovale or ductus arteriosus.

3. HEARTS IN WHICH THERE IS ALMOST COMPLETE ARREST IN THE DEVELOPMENTAL EXPANSION OF THE INFUNDIBULUM.

A third group of cases represents an almost complete developmental arrest of the infundibulum. The typical condition is shown in Figs. 4A and 4B, drawn from a specimen presented to me by Dr. J. A. Milne. The infundibulum is represented by a mere slit or irregular chink situated at the orifice of the pulmonary artery and lined by thickened endocardium. The orifice of the pulmonary artery may be represented by merely a small cicatricial mass or a very small lumen may be present in which the fused semilunar valves can be distinguished. The pulmonary artery, perhaps represented by a fibrous thread at its origin, rapidly increases in calibre as it passes into its point of division into right and left branches An intraventricular foramen is always present, but only in about 30 per cent. of the cases—which numbered 37 in all—was there a patency of the ductus arteriosus.

FIG. 4.



Heart of a girl, aged two years, showing complete arrest of

In such cases the branches of the pulmonary artery are very thin-walled and often greatly dilated. How are they filled with blood in such cases? The orifice of the pulmonary artery is closed or almost closed Dr. Bertrand E. Dawson gave me the opportunity of injecting the arteries in a case where there was marked congenital pulmonary stenosis. The bronchial arteries and other accessory branches derived from the intercostals were so enlarged that some of them were equal in size to the radial arteries, but one was especially struck by the number rather than by the size of the accessory arterial communications; they formed a leash like plexus. The arteries accompanying the phrenic nerves were greatly enlarged and sent branches to the lungs. In those cases where there is complete arrest of the infundibulum, the arterial system of the lungs is filled from the systemic circulation To merely live—and that is the condition of patients with such hearts—a wonderfully small supply of oxygenated blood is apparently sufficient.

4. CASES IN WHICH THE STENOSIS IS MERELY DUE TO FUSION OF THE SEMILUNAR VALVES.

In my list of specimens I have noted 23 in which there was apparently no developmental arrest of the infundibulum yet the pulmonary semilunar valves were united, giving rise to a true condition of pulmonary stenosis Five of the specimens on my list are in the College collection, but when they were taken out of their jars and examined it was seen that in four of them there was an arrested condition of the infundibulum. It is very probable that if all specimens of this nature were so displayed as to show the infundibular part of the right ventricle there would remain only a few in which pulmonary stenosis is present by itself. Still, the condition does occur and is the only form which one could conceive to be the result of a fœtal endocarditis In Figs. 5 and 6 is shown the usual condition of the valves. They are fused so as to form a bell-shaped perforated diaphragm. In most cases traces of only two valves can be made out, but occasionally a third can be distinguished.

FIGS. 5 AND 6.

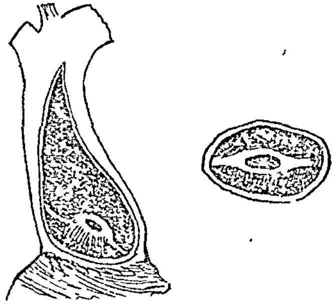


FIG. 6 —Pulmonary valves exposed by opening the pulmonary artery in a case of arrested development of the in- … of stenosis

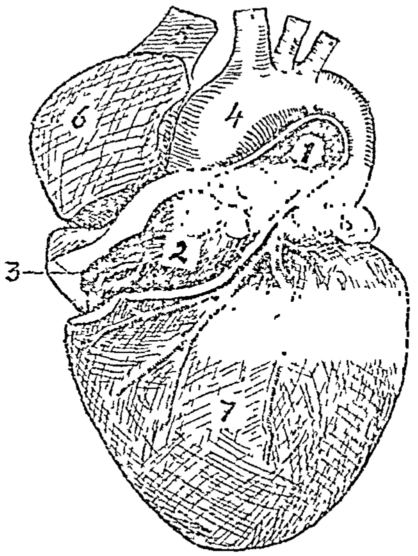
of stenosis exposed
ery just above the

Many patients who suffer from pulmonary stenosis die from broncho-pneumonia or other forms of infection; in such cases it is usual to find the margin of the pulmonary orifice carpeted with vegetations. It is difficult, however, to conceive that the peculiar form of the pulmonary valves in these cases could result from an inflammatory condition in the fœtus The condition is totally unlike the stenosis which occurs after birth. Under the microscope the valves, in cases of congenital pulmonary stenosis, are seen to be composed of dense laminated fibrous tissue at their margins, but the body of the valves shows a reticulated tissue distinctly embryonic in character.

5 CASES IN WHICH THE INFUNDIBULUM IS PRESENT AND THE BODY OF THE RIGHT VENTRICLE IS SMALL OR ABSENT.

The group of cases I am now going to describe illustrates further the dual constitution of the right ventricle. The type specimen of this group is shown in Fig. 7, drawn from a heart sent to me by Dr. F. S. Mackenzie. Here, while the infundibulum of the right ventricle is well developed the body of that chamber is atrophied or obliterated. The condition is usually accompanied by a congenital stenosis or complete obliteration of the right auriculo-ventricular orifice. In such cases the foramen ovale is patent, so that the venous blood can pass from the right to the left auricle and ventricle. From the left ventricle part of the blood passes into the infundibulum by a patent interventricular foramen. There is also another form in which the infundibular cavity is present and the body of the right ventricle is apparently absent—namely, those cases where the right and left ventricles are unseparated by an interventricular septum. Of the seven specimens belonging to this group five are cases in which the right ventricle is obliterated, two in which the two ventricles form a common chamber.

FIG. 7.



Heart showing infundibulum developed but the body of the right ventricle atrophied. 1, Pulmonary artery opened; 2, infundibulum opened; 3, ostium infundibuli, leading by an interventricular foramen into left ventricle, 4, aorta; 5, superior vena cava; 6, right auricle; 7, left ventricle; and 8, left auricle.

6. CASES OF SUBAORTIC STENOSIS.

Turning now to the left side of the heart, a condition—very rare, it is true—is found similar in nature to the malformations just described on the right side with this difference. The part of the fœtal heart from which the infundibulum is derived—the bulbus cordis—normally disappears completely from the left side of the heart, but a trace of it may persist giving rise to the condition known as subaortic stenosis—a condition which has hitherto not received a satisfactory explanation. Thus, while the abnormality on the right side of the heart depends on an arrest of growth, that on the left side depends on an arrest of atrophy. The type specimen, which belonged to the museum of the London Hospital, and was lost in the disastrous fire at Toronto University, is shown in Fig. 8. Just below the orifice of the aorta a fibrous collar is seen to surround the infundibulum of the left ventricle. It is formed by an irregular thickening of the endocardium. The ostium infundibuli is in every way homologous to the corresponding abnormal constriction which occurs in the right ventricle. I have seen only four hearts showing subaortic stenosis—one in the museum of St. George's Hospital, one in St. Bartholomew's, one in Guy's, and the one figured here. We have, unfortunately, no specimen in the College collection.

7. CASES OF CONGENITAL AORTIC STENOSIS.

The condition of congenital aortic stenosis is rare in England. Altogether I noted only four cases in the museums of the metropolitan medical schools. The malformation is apparently much more frequently seen in St. Petersburg, for in 106 malformed hearts Therémin found this abnormality 17 times. Among 14 stillborn children—all of them showing marked deformity of the body with malformation of the heart—I observed aortic stenosis in only three of them, two of these being in children of Polish Jews.

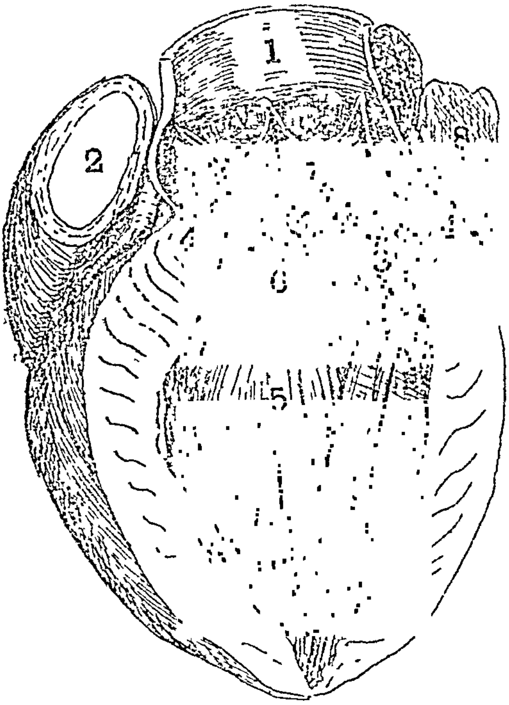
SUMMARY OF CASES OF MALFORMATION OF THE BULBUS CORDIS.

So far I have dealt with malformation of the heart in the vicinity of the origins of the pulmonary artery and aorta—the part into which the bulbus cordis is incorporated. The cases fall into seven groups:—

1. Incomplete fusion of the infundibulum with the body of the right ventricle	19 cases.
2 Partial arrest in the development of the infundibulum	44 ,,
3. Complete arrest of the infundibulum	37 ,,
4. Fusion of pulmonary semilunar valves	23 ,,
5. Partial or complete absence of the body of the right ventricle with development of the infundibulum ...	7 ,,
6. Subaortic stenosis	4 ,,
7. Aortic stenosis	7 ,,

Altogether 141 cases out of a total of 272 malformed hearts are imperfect because of a lesion connected with the transformation of the bulbus cordis during the development of the embryo.

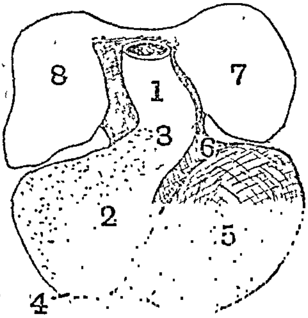
FIG. 8.



Heart showing subaortic stenosis (heart of man, aged 20 years) 1, Aort[illegible] 3, mitral valve; 4, 4, fibrous [illegible] ortic vestibule; 5, interventrici[illegible] of septum below ring; and 7, non-coronary cusp of aortic orifice, site of endocarditis

Applying now our present knowledge of the development and comparative anatomy of the heart to the explanation of these abnormalities, we find ourselves hampered at the very outset by a complete ignorance of the functional nature of the bulbus cordis. It is especially large in the shark tribe and is often lined with valves and thickened endocardium throughout (Fig. 1). Its musculature is striated but the fibres are more fusiform and less branched than in the other chambers. The nerve-supply is abundant. Systole occurs in it subsequent to contraction in the ventricles. Somehow its function is connected with the gill or respiratory system; it is with the respiratory system that it is correlated. When the gills become replaced with lungs and the aortic stem divided into systemic and pulmonary trunks as in the amphibia, the part of the bulbus at the origin of the aorta atrophies more than the part connected with the pulmonary artery. In reptiles a part of the bulbus musculature persists and can be distinguished from the proper ventricular muscle; I have also seen it well marked in an abnormal human heart. In the hearts of birds and mammals the bulbus musculature completely disappears, but its cavity persists, undergoes a great expansion, and forms the infundibulum of the right ventricle. How far the infundibulum is formed by a downward expansion of the bulbus cavity into the right ventricle and how far it is formed by an upgrowth over it of the ventricular muscle is difficult at present to decide, but the evidence of malformed hearts points to the former process being the true one. What the exact function of the infundibulum of the mammalian right ventricle may be is difficult at present to say, but its origin, its comparative anatomy, and the arrangement of its musculature make *it certain that it has something to do with the* [illegible] There are many [illegible] of the heart [illegible]

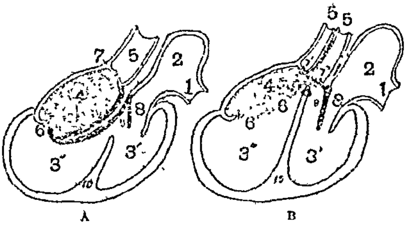
FIG. 9 A.



[illegible] right auricle.

The embryological transformation which occurs at the aortic end of the cardiac tube during the latter part of the first, and earlier part of the second, month of development is very remarkable. In Fig. 9, A and B, are shown side by side the heart of a human embryo, probably about 21 days old, reconstructed and described by the late Professor His, and that of a shark. The bulbus cordis, from which the primitive aorta springs, is still well demarcated from the ventricular part of the tube—just as in the shark's heart. The ventricle at this time has, like the stomach, a greater and lesser curvature. As development proceeds a rapid atrophy of the lesser curvature sets in, so that the bulbus comes in contact with the auricular canal, just as an atrophy of the lesser curvature of the stomach would bring the pylorus against the œsophagus. The atrophy also involves the corresponding or lesser curvature of the bulbus. When the primitive aorta becomes divided into aorta and pulmonary artery, the aorta is found to be connected with the lesser curvature of the bulbus and ventricle—where the bulbus atrophies, while the pulmonary artery, being situated towards the greater curvature, is connected with the par which persists.

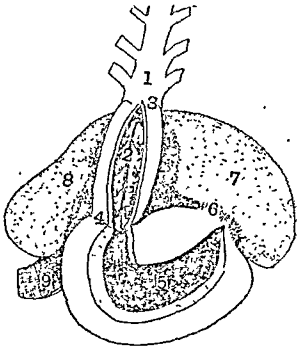
FIG. 10.



To show the manner in which the bulbus cordis becomes incorporated in the mammalian heart and forms the infundibulum of the right ventricle. A. The bulbus as a separate chamber. B. The bulbus as incorporated in the right ventricle. 1, orifice of sinus venosus; 2, auricles; 3, 3', left and right ventricles; 4, bulbus cordis; 5, common [illegible] s (in B it becomes [illegible] lesser curvature, [illegible], aortic orifice of [illegible] anterior cusp of mitral; 10, interventricular septum.

The diagram given in Fig. 10 will help to make this transformation better understood. In the shark's heart one recognises the *constriction or orifice between it and the common* ventricle—the ostium bulbi. The ostium bulbi is usually provided with valves; the pulmonary and aortic semilunar valves represent those at the aortic orifice of the shark's bulbus. In the process of development, as Fig. 10 shows, the ostium bulbi becomes stret[illegible] the interventricular septum; t[illegible] side of the septum forms the c[illegible] to the left may persist and form the subaortic constriction. The embryological and comparative evidence make it certain that the bulbus is incorporated in the ventricle of the heart; the ostium infundibuli in the right ventricle of abnormal hearts and the subaortic constriction on the left occupy the position at which the ostium bulbi should occur. In brief, the theory of the bulbus cordis explains a great number of abnormal conditions hitherto inexplicable.

FIG. 9 B.



Heart of [illegible]
heart of [illegible]
aortic [illegible]
orifice; [illegible]
and right auricle.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Joseph Chapman of Grimsby the Brompton Hospital for Diseases of the Chest, the London Hospital, the Middlesex Hospital, the St. Mark's Hospital for Fistula, and the Grimsby District Hospital will each receive a net sum of about £25,000.—The late Mr. Arthur Campbell of Edinburgh bequeathed £[illegible] to the Hospit[illegible] the Royal V[illegible] and £500 to t[illegible]

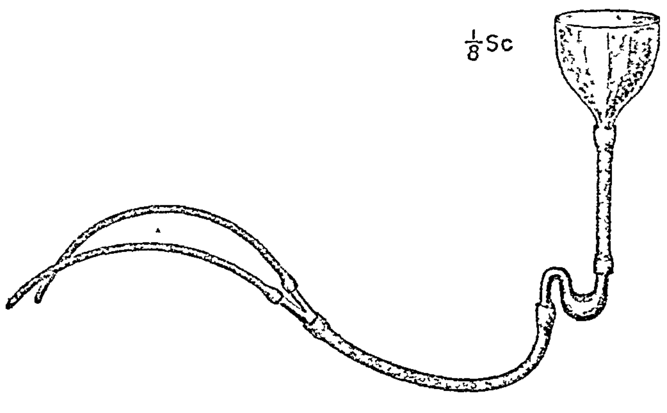
THE MEDICO-LEGAL SOCIETY.—The eighth annual general meeting of this society was held at 22, Albemarle-street, W., on July 27th, Dr. W. Wynn Westcott (vice-president) being in the chair. The annual statement of accounts was presented by Mr. Schröder (honorary treasurer) and approved. Mr. Digby Cotes-Preedy read the honorary secretaries' report, which showed that the membership of the society now numbered 238, 67 new members having been elected during the year. Votes of thanks were passed to Sir Joseph Walton, the retiring President, and officers. Sir John Tweedy was elected President for the coming year, Mr. Walter Schröder was re-elected honorary treasurer, and Mr. Cotes-Preedy and Mr. William A. Brend were re-elected honorary secretaries. The meeting discussed and amended certain rules of the society.

A METHOD OF GIVING ETHER BY MEANS OF NASAL TUBES.

By H. M. PAGE, F.R.C.S. Eng.,
ANÆSTHETIST TO GUY'S HOSPITAL, ETC.

Dr. George Crile of Cleveland, Ohio, devised this method for administration of ether in cases of removal of the tongue and of operations for malignant disease of the mouth, and in extensive dissections for secondary disease in the neck. The advantages claimed by Dr. Crile after a large experience are that a laryngotomy is avoided; that no blood or septic material is inhaled, and therefore the risk of bronchitis and pneumonia is eliminated; that the anæsthetist is altogether out of the way of the operator; and that in the neck cases asepsis can be more certainly attained than by the other methods in use for anæsthetising these cases. Though the number of cases in which I have used this method has been small I venture to publish an account of them, as I do not find the method described in the English text-books on anæsthetics, and I think it deserves further trial and to be better known over here. I have also for the same reasons fully described the technique of the method.

The apparatus necessary is very simple and has been most satisfactorily made for me by Messrs. Down Bros. from a photograph which Dr. Crile was kind enough to send me. It is shown in the accompanying illustration. It consists of two indiarubber tubes sufficiently large to closely fit the nares; these nasal tubes are coupled to a much larger indiarubber tube by means of a Y-shaped piece of glass-tubing; this larger indiarubber tube is connected with a large glass funnel which is covered with a single layer of thin flannel, and it is interrupted in its course by a glass trap to prevent any excess of ether running down the nasal tubes.



An injection of morphine and atropine is given an hour before the operation. I have used $\frac{1}{4}$ gr. and $\frac{1}{75}$ gr. respectively. Ether anæsthesia is induced by the open drop method, the mouth is then opened, and the pharynx and pharyngeal aspect of the epiglottis and larynx are brushed over with a 2 per cent. solution of cocaine, and the closely fitting indiarubber tubes are pushed down the nares till the lower ends are opposite the epiglottis. The pharynx is then packed with a roll of sterilised gauze whilst the tongue is being pulled forward. In packing, care must be taken not to compress the tubes, though it must be done thoroughly, and the lateral parts of the pharynx to the outer sides of the tubes must not be neglected. Ether anæsthesia is now maintained by the drop method on the flannel covering the glass funnel. It is a help to get some one to begin dropping ether on the flannel as soon as the nasal tubes are passed and so prevent to some extent the lessening of anæsthesia which must occur whilst the packing, &c., of the throat is being done. A sterilised towel is thrown over the head of the patient, completely covering it. The anæsthetist stands about two feet behind the patient. The breathing and the colour of the blood at the site of the operation are watched and an occasional look at the patient can be taken by raising the towel without interfering with the operator. It would be quite easy to give a little oxygen by passing a tube through the flannel, but this has not been called for in the cases I have anæsthetised. As to the rate of dropping the ether, less ether was required than in the ordinary way of using the open drop method.

The first case was one of extensive dissection of the neck for malignant disease secondary to that of the tongue. The second case was one of removal of half of the tongue subsequent to the above operation. On this second occasion the patient was anæsthetised by Mr. George Rowell. I was present only at the beginning of the operation, but Mr. Rowell writes as follows: "The method answered well. The patient kept a good colour, while his breathing remained free and was unaffected by inconvenient reflex action during all the time that the tubes were in position. Very little ether was needed to maintain this degree of narcosis, and at the end of the administration recovery was rapid."

In the third case an extensive operation for clearing the neck for secondary disease was first done, and then half of the tongue was removed at one sitting. Shortly after beginning the dissection of the neck it was noticed that the blood was rather dark at the site of operation, and on raising the towel some cyanosis of the face was found, so the mouth was opened, the gauze packing removed, and the pharynx repacked, after which the colour kept quite good for the rest of the operation. One of the tubes may have been somewhat compressed. The operation was not delayed for more than two minutes.

As far as the anæsthetist was concerned the cases of removal of the tongue presented no difficulty and caused less anxiety than when the tongue is removed under other methods of anæsthesia, especially when a preliminary laryngotomy is not done. The patient in each case had recovered all the reflexes and spontaneous movement and was almost conscious when removed from the operating table and could be sat up in bed immediately. I should say that this condition of the patient is easier to ensure after a long operation by this method than when chloroform has been given. The third case, in which the whole operation was done at one sitting, was naturally a long one and liable to be followed by a good deal of shock, but there was practically no shock at all. I do not think the method could be used when the whole of the tongue down to the epiglottis is to be removed as there would not be enough hold left for the packing. Mr. W. Arbuthnot Lane and Mr. C. H. Fagge, who operated on these cases, have authorised me to say that the method gave a very free access to the site of operation owing to the anæsthetist being altogether out of the way, that antiseptic precautions were facilitated, that hæmorrhage was not troublesome, and that each patient made an uneventful recovery.

I have used Crile's nasal tubes on two other occasions with chloroform instead of ether. Chloroform had to be employed as fulguration was to be done after the removal of the malignant disease from the neck. Morphia and atropine were injected, anæsthesia was induced with chloroform, the pharynx was cocainised, and the nasal tubes were passed and the pharynx packed as before. The nasal tubes were then coupled up with a Vernon Harcourt inhaler and chloroform administered with a small quantity of oxygen. The anæsthesia gave no trouble whatever on either occasion, the air-way and the working of the valves being more satisfactory than in some cases in which the Vernon Harcourt inhaler is used with the face-piece. The patient on each occasion kept a perfect colour, and though each administration, owing to the fulguration, lasted nearly two hours, movement and phonation had returned before the patient left the table. A faint corneal reflex was allowed to persist the whole time, but the patient was absolutely still and there were no reflex effects on respiration or circulation. The strength of chloroform vapour used was in the first operation from my notes: "Most of the time $\frac{1}{2}$ per cent., part of the time $\frac{1}{4}$ per cent., never more than 1 per cent." In the second administration: "2 per cent. was used at first for a short time, after which the indicator varied between $\frac{1}{4}$ per cent. and 1 per cent., being most of the time at $\frac{1}{2}$ per cent." The two operations were on the same patient and there was a good deal of after-vomiting for 12 hours on each occasion. This did not occur in the before-mentioned cases in which ether was used.

Grenville-place, S.W.

(I.) PRESSOR BASES IN NORMAL URINE AND THEIR DIMINISHED EXCRETION IN GOUTY URINE; (II.) THE EXCRETION OF CHLORIDES IN GOUT.

BY WILLIAM BAIN, M.D. DURH., M.R.C.P. LOND.
(From the Physiological Laboratory, King's College, London.)

I.

IN 1906 Abelous and his colleagues[1] obtained from putrid horse-flesh a base which produced a rise of arterial blood pressure when injected intravenously. Abelous also obtained a base with similar properties from normal urine which he named "urohypertensine," and he suggested that it was the same substance as that obtained from putrid meat. In March of this year Rosenheim,[2] who worked with putrefying placenta, and Barger and Walpole,[3] who, like Abelous, worked with putrid flesh, were able to isolate the pressor material and show that it consists of several bases, two of which were identified with certainty. One of these, iso-amylamine, is formed from leucine, and the other, *p*-hydroxyphenylethylamine, is derived from tyrosine. The second is the more powerful agent and is related chemically to adrenaline. If pressor bases originate by putrefaction outside the body it is probable that similar substances are produced by putrefaction within the intestinal canal. In fact, Abelous and Bardier[4] have more recently found their "urohypertensine" in the fæces. The bases would probably be absorbed and finally eliminated in the urine; it was therefore considered advisable to try to find out if normal urine contains one or more pressor substances. Further, it appeared to me to be an interesting problem to ascertain whether in gout, in which a moderately high blood pressure is a fairly common condition, the urine contains pressor materials.

Normal Urine.

I first repeated Abelous's experiments with normal urine; in each experiment two and a half litres of the urine were used. Briefly, the method consists in treating the urine with mercuric perchloride or lead acetate and filtering. The filtrate is freed from mercury or lead in the usual way by sulphuretted hydrogen, again filtered, rendered acid, and evaporated to a small bulk; it is then rendered alkaline with powdered sodium carbonate and extracted with ether; this extract is finally treated with oxalic acid and a minute quantity of an oxalate of the base was thus obtained. This was dissolved in 10 cubic centimetres of normal saline solution, and the intravenous injection of 1 cubic centimetre of this solution was found to cause a distinct rise of blood pressure. (Fig. 1.) Barger and Walpole consider it probable that Abelous's "urohypertensine" is iso-amylamine, but although they evaporated 30 litres of human urine they were unable to obtain sufficient of the base for the purpose of identification. They found, however, that nearly all the pressor action is due to a substance which is volatile with steam, and this would accord with the view that it is iso-amylamine.

I have also found that normal urine contains a pressor

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[1] Abelous, Ribaut, Soulié, and Tougan: Comptes Rendus de la Société de Biologie, 1906, vol. i., pp. 463, 530.
[2] Journal of Physiology, 1909, vol. xxxviii., p. 336.
[3] Ibid., p. 343.
[4] Journal de Physiologie, 1909, p. 34.

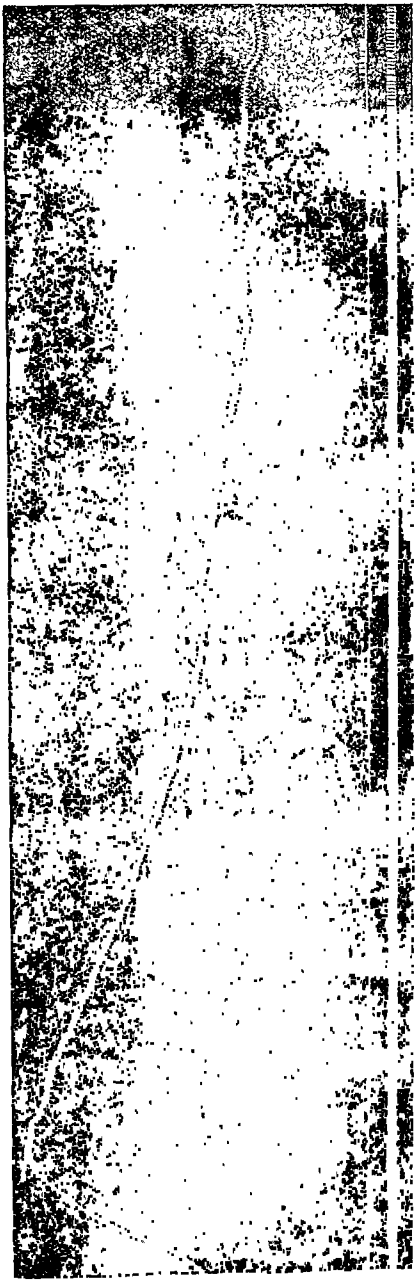


FIG. 1.

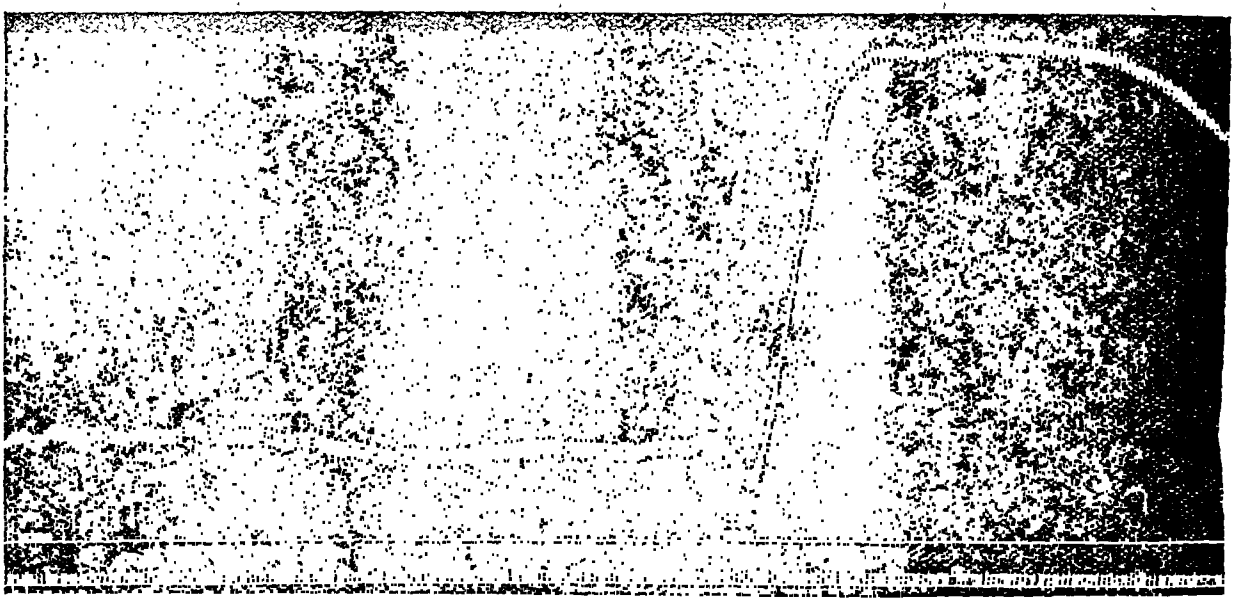
DESCRIPTION OF FIG. 1.

Effect on carotid blood pressure of a pithed cat of the intravenous injection of what is referred to in the text as the [illegible]
from [illegible]
time [illegible]
the [illegible]
tion [illegible]
read [illegible]
[illegible]
material from gouty urine was injected.

principle volatile with steam. Two and a half litres of urine were acidified, evaporated down to about 15 ounces, and filtered. The filtrate was made alkaline and steam was passed through it. The distillate was extracted with chloroform and the base removed from this solution with dilute hydrochloric acid. The hydrochloric solution was concentrated, first on the water bath and then in a desiccator over soda-lime. The residue was dissolved in 10 cubic centimetres of normal saline solution and neutralised with sodium bicarbonate; 2 cubic centimetres of this solution caused a pronounced rise of blood pressure. (Fig. 2.)

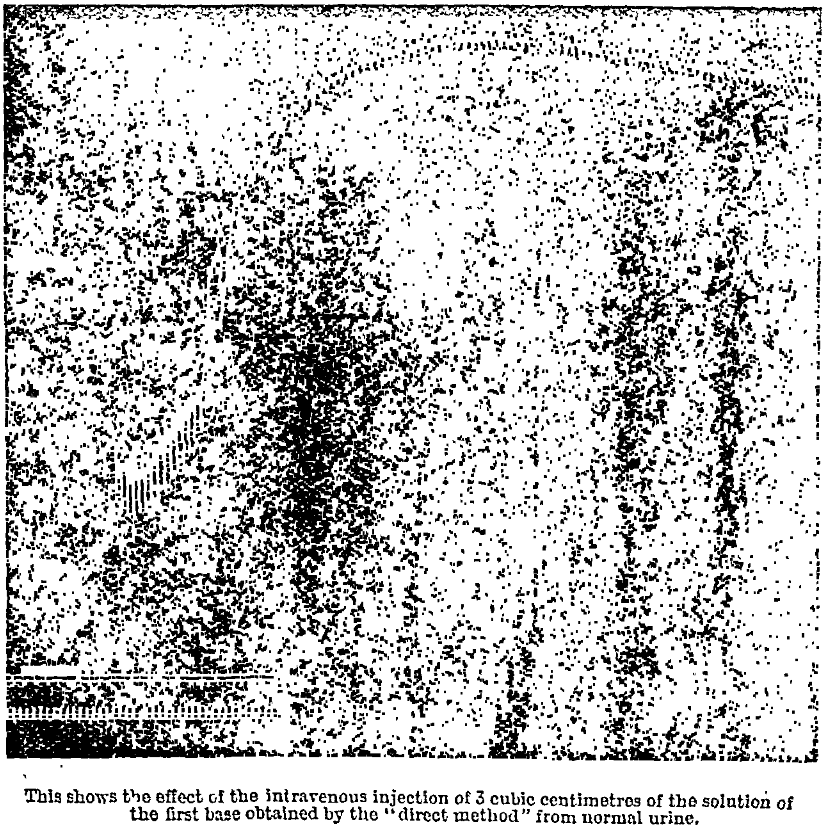
A second pressor base was obtained from the urine after the complete removal of the first base with ether. In these experiments this base was extracted by amylic alcohol from urine rendered alkaline with sodium carbonate. The extract had in every case a distinct pressor effect (Fig. 5) and gave Millon's reaction. It is not improbable that this base is identical with, or nearly allied to, *p*-hydroxyphenylethylamine. Kahlbaum's pyridin-free amylic alcohol was used in these experiments.

FIG. 2.



[illegible] t mark on the signal line 2 cubic centimetres of the solution finally obtained from gouty urine by d. At the second mark 2 cubic centimetres of the solution of the first base obtained by the steam urine were injected. The contrast between the two effects is again most marked.

FIG. 3.



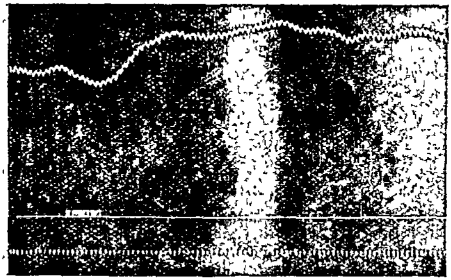
This shows the effect of the intravenous injection of 3 cubic centimetres of the solution of the first base obtained by the "direct method" from normal urine.

In another experiment the urine from which the first base had been removed by steam distillation was acidified and again made alkaline with sodium carbonate, but the material obtained from the amylic alcohol extract only produced a slight rise of pressure; owing to an accident half of the extract was unfortunately lost. It is quite possible that treatment with steam may produce some change in the second base. With the object of preventing, if possible, any change in the bases during their extraction a simpler method was devised. This will be alluded to as the "direct method." Two and a half litres of urine were acidified and extracted several times with ether. The urine was then made alkaline and repeatedly extracted with ether. This extract contained the first pressor base. (Fig. 3.) The urine was again made acid and then rendered alkaline with powdered sodium carbonate and extracted with amylic alcohol. From this extract was obtained the second pressor base. (Fig. 5.) The bases were removed from both the ethereal and amylic alcohol extracts with dilute hydrochloric acid.

Gouty Urine.

The same methods were employed for the investigation of gouty urine. By Abelous's method the first pressor principle was found to be entirely absent in three cases. (Figs. 1 and 2.) These urines contained no albumin. In a fourth case the method by steam distillation was used but the distillate did not contain a pressor substance. A trace of albumin was present in this urine. By the "direct method" the alkaline ethereal extract in two cases yielded a pressor base, but the rise in blood pressure which it caused was much less than that exhibited by similar extracts from the same quantity of normal urine. (Fig. 4.) Amylic alcohol extracted from all the gouty urines the second pressor base, but the rise of pressure produced was not so great as that obtained when normal urine was treated in exactly the same way. Presumably, therefore, the quantity of the second base is less in gouty than in normal urine. (Compare Figs. 5 and 6.)

FIG. 4.



This shows the very slight effect of 2 cubic centimetres of a solution prepared by the "direct method" from gouty urine.

The contrast between the effects with normal and gouty urine is clearly shown in the accompanying tracings, which are selected as typical of the results.

Abelous found "urohypertensine" absent from the urine in a case of arterio-sclerosis. This is the only previously recorded case of a pathological urine having been examined for a pressor substance. In a severe case of interstitial nephritis occurring in a gouty subject I found both bases absent.

These observations are very suggestive, but perhaps it would be unwise at this stage to draw wide sweeping conclusions from them owing to their limited number. The retention or non-elimination of these bases in gout would explain the rise of blood pressure so frequently seen in gouty patients. The influence of diet on the formation of such bases is another question suggested by this investigation.

I have to thank Dr. Rosenheim for his valuable suggestions and help during the investigation. I am also indebted to Professor W. E. Dixon for his assistance with the blood pressure experiments, which were throughout performed on pithed cats. The gouty urines were collected for me by Dr. J. O. Muir, Mr. D. S. Sandiland, Dr. C. Thackray, and Mr. G. G. Butler, to whom my thanks are also due.

Summary.

1. Normal urine contains two bases which produce a rise of blood pressure.

2. The first of these was originally discovered by Abelous and termed by him "urohypertensine." It can be obtained as an oxalate from an ethereal extract of the urine. It is volatile with steam and is probably identical with isoamylamine, a base which is formed from leucine.

3 The second base remains behind after extraction of the first base with ether, and it can then be obtained by extracting with amylic alcohol the urine made alkaline with sodium carbonate. Its reactions indicate that it is identical with, or allied to, *p*-hydroxyphenylethylamine, a base which is formed from tyrosine.

4. Both bases are obtained during the putrefaction of proteins. The existence of pressor basic material during the putrefaction of flesh was discovered by Abelous. The identification of the bases is the result of Rosenheim's work on putrefying placenta and of Barger and Walpole's on putrid meat.

5. Their presence in the urine is explicable on the hypothesis that they are formed by putrefactive processes in the alimentary tract; they are then absorbed and excreted in the urine.

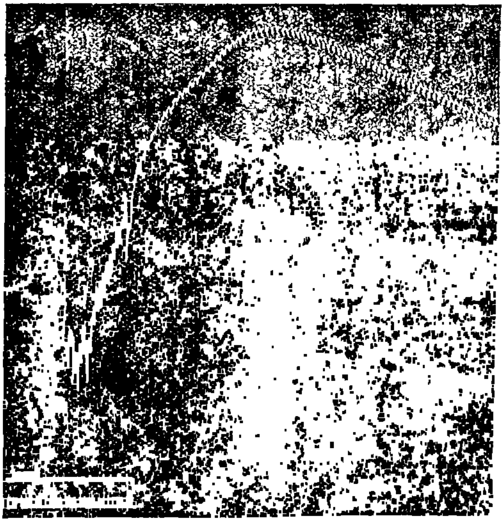
6. In the gouty urines so far examined by the methods of Abelous and steam distillation the first base is entirely absent. By the "direct method," however, a pressor base was present, but the rise in blood pressure caused by it was much less than that produced by a similar extract from normal urine.

The amount of the second base in gouty urine was smaller than in normal urine. The decrease in the elimination of these bases will possibly explain the rise in arterial blood pressure frequently observed in gouty patients.

II.

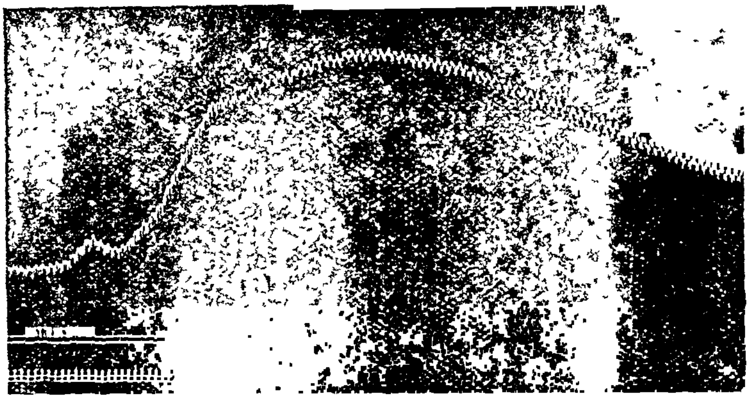
The vulnerability of the kidney in gout is generally admitted, but many cases of this disease run their course without apparently any signs of renal complications. The work of the kidney consists chiefly in the excretion of urea and salts. The functional capacity of the kidney

FIG. 5.



Ef[illegible] the second pressor base (probably [illegible] tained from normal urine by the [illegible] obtained from 2½ litres of urine was [illegible] normal saline solution, and 3 cubic [illegible] at the time indicated on the signal [illegible]

FIG. 6.



An exactly similar experiment with 3 cubic centimetres of the solution obtained from the same quantity of gouty urine. The pressor effect is much less marked than with normal urine.

may be ascertained by estimating the output of chlorides and total nitrogen. It is held that a functional derangement of the kidney may exist without any clinical evidence of renal disease, and that this condition is not uncommon in chronic gout.

The present investigation was undertaken to find out if defective elimination of the urinary chlorides was a feature of chronic gout, and also to ascertain the response of the kidney in gout to an increased amount of work. In renal disease it is well known that the excretion of chlorides is more or less diminished according to the degree and extent of the inflammatory process; therefore in the selection of cases for the purpose of investigation those patients whose urines contained a trace of albumin were excluded.

Clinically, two fairly distinctive types of chronic gout are met with. In the first type the patient has had one or more acute or subacute attacks of the disease, and the so-called uratic deposits are few or absent. The blood pressure is generally more or less above the normal average. In the second type the patient has never had either an acute or subacute attack, and the uratic deposits, which are a distinct feature of this variety, have occurred painlessly. The arterial blood pressure is not infrequently normal, and it may even be somewhat below the normal average level.

The two patients selected for this investigation were about 50 years of age and were admitted into St. George's Union Infirmary, South Kensington, for acute gout, about four weeks before the investigation commenced. They both had had previously several acute attacks of the disease. Their blood pressure was taken in the recumbent posture. A's systolic pressure was 125 mm. Hg; B's 141. The patients were placed upon a fixed diet three days before the urine and fæces were collected. They ascertained beforehand the quantity of the prescribed diet that would satisfy them. A's diet consisted of three pints of milk, four raw eggs, half an ounce of tea in a pint of water, and 36 Huntley and Palmer's breakfast biscuits. B took 42 biscuits, otherwise both diets were exactly alike. This diet was selected as it was comparatively easy to estimate the chlorine content of it. On Feb. 19th and subsequent days 10 grammes of sodium chloride were added to the fixed diet of both patients.

Estimation of Chlorides in the Diet.

The chlorides in the various articles of diet were estimated by Legge Symes's modification of Neumann's method.[5] Briefly, the method is as follows: An ordinary distilling flask is employed with a tapped funnel and delivers through a long adapter to a nitrogen flask (Fresenius pattern) containing $\frac{n}{10}$ silver nitrate. I used a second nitrogen flask in series with the first. 100 cubic centimetres of sulphuric acid and 5 cubic centimetres of nitric acid were used for each gramme of protein. The food material was first inserted into the distilling flask, then the acids were allowed to run slowly in and heat applied; all the chloride is thus evolved as hydrochloric acid. When gas had almost ceased to bubble through the silver solution the tap of the funnel in the distilling flask was opened and the air aspirated through the receiver. The silver solution was titrated with $\frac{n}{10}$ sulphocyanide solution. A sample of the milk was taken daily and the chlorides in 10 cubic centimetres of it estimated. Each egg was weighed and subsequently also its shell. The chlorine content of a weighed portion of two sample eggs was ascertained. The chlorine of the tea, which is very small, was ignored. 12 biscuits were weighed and pounded into a fine powder, and the chlorides in two grammes estimated.

Analyses of the Urine and Fæces.

The chlorides, uric acid, and total nitrogen of the urine were estimated; the latter two partially as a check. The chlorides were estimated by Volhard's method, the uric acid by Hopkins's process, and the total nitrogen by Kjeldahl's method. The fæces were evaporated on a water bath, mixed with alcohol and dried. They were then reduced to a powder and weighed. The chlorine content of two grammes was ascertained by Legge Symes's modification of Neumann's method. The results are tabulated below:—

TABLE I.—*Showing the Analysis of the 24 Hours Urine.*

Patient A.

—	February—							
	15th.	16th.	17th.	18th.	19th.*	20th.	21st.	22nd.
Quantity in c.c....	1410	1185	1175	1185	1175	1265	1255	1340
Chlorides in grms.	7·17	7·05	7·10	7·08	17·17	17·381	16 813	18 291
Total nitrogen in grms.	12 06	10 57	13 2	9·95	12·6	12 9	11·09	12 13
Uric acid in grms.	0·492	0 308	0 523	0 203	0 455	0·457	0 342	0 407

* On this and following days 10 grammes of sodium chloride were added to the diet.

TABLE II.—*Showing the Total Amount of Chlorides in the Food, Urine, and Fæces during the 24 Hours.*

Patient A.

—	February—							
	15th.	16th.	17th.	18th.	19th.*	20th.	21st.	22nd.
Chlorides in food	7 18	7·05	7 05	7·22	17·16	17 22	17 19	17·09
Chlorides in urine	7.17	7 05	7·10	7 08	17·17	17·38	16 81	18 29
Chlorides in fæces	—	—	0 143	0 041	0 014	—	0 266	0·013

* On this and following days 10 grammes of sodium chloride were added to the diet.

TABLE III.—*Showing the Analysis of the 24 Hours Urine.*

Patient B.

—	February—						
	15th.	16th.	17th.	18th.	19th.*	20th.	21st.
Quantity in c.c.	1265	945	1065	1090	975	1160	1400
Chlorides in grms. ...	7·73	7·23	6 71	6 87	17·74	17 63	19 25
Nitrogen in grms. ...	13·11	13·13	11·77	11·86	13 65	13 96	14 83
Uric acid in grms. ...	0 913	0 907	0 763	[illegible]	0 836	0 904	0·923

* On this and following days 10 grammes of sodium chloride were added to the diet.

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[5] W. Legge Symes, Journal of Physiology, vol. xxxii., p. 221.

TABLE IV.—*Showing the Total Amount of Chlorides in the Food, Urine, and Fæces during the 24 Hours.*

Patient B.

—	February—						
	15th.	16th.	17th.	18th	19th.*	20th.	21st.
Chlorides in food	7·64	7 48	7 50	7 67	17 64	17 66	17 74
Chlorides in urine ...	7·73	7 23	6·71	6 87	17 74	17 63	19 25
Chlorides in fæces ...	0·083	0 160	—	0 141	0 064	0 023	—

* On this and following days 10 grammes of sodium chloride were added to the diet.

These results show that in gout the output of chlorides practically balances the intake, and that the kidneys in the two cases under consideration performed their work in a satisfactory manner—in fact, behaved as normal organs.

There are two significant points to be noted in the tables. On Feb. 18th in the case of A there appears to be a simultaneous retention of uric acid and total nitrogen. This combination has not been observed before, but little or no importance can be attached to an isolated experimental observation. Attention may also be drawn to the very pronounced difference in the output of uric acid in the two cases, both practically on the same diet.

It was thought of interest to determine the amount of chlorides excreted during the administration of an excessive quantity of common salt in the diet. A gouty patient was asked to take as much chloride of sodium with his food as he conveniently could, and after a couple of days the 24 hours urine was collected for three days in succession. A similar experiment was carried out with a case of chronic nephritis and the results are presented in tabular form.

TABLE V.—*Showing the Excretion of Chlorides and Urea in the 24 Hours.*

—	Chronic gout.			Chronic nephritis.		
	Feb. 26th.	Feb. 27th.	Feb 28th	Feb 26th	Feb. 27th	Feb 28th.
Quantity of urine in c c.	1561	1505	1545	1363	1448	1336
Urea in grms. ...	33 46	26 93	30 16	11·58	9 54	10 64
Chlorides in grms.	24·03	26·18	25·87	9 26	7·20	8·79

Although I am unable to state the amount of chloride taken by these two patien
in both, and one sees in
retention of chlorides in
with the gout case.[6]

It has been suggested that mineral waters containing sodium chloride should not be given to gouty patients unless the sodium chloride content is minimal. The argument used to support this suggestion was that in gout every kidney was potentially a diseased organ and that in nephritis a retention of chlorides occurred. The natural mineral water containing sodium chloride with which I am most familiar acts both as a purgative and a diuretic. As this water quickly passes through the alimentary canal most of the salt is eliminated in the fæces, and the small extra amount with which the kidney has to deal appears to have a stimulating effect upon that organ, and, as these experiments show, cannot be regarded as harmful, seeing how readily the kidney in cases of gout excretes much larger amounts added to the food. When there is evidence of kidney disease it is obvious that such waters must be cautiously prescribed.

Attention has been drawn in the first part of this paper to the diminished excretion of the pressor bases in cases of chronic gout. If these bases are retained it can scarcely be due to the incapacity of the kidney to eliminate them, for we know that separating the salts from the blood is the hardest work the kidney has to perform, and we have seen that in two cases of gout this task the kidney adequately accomplished.

I have to thank Dr. Muir for placing the two patients at my disposal and for the care which he took in seeing that the experimental requirements were complied with. I am also indebted to Mr. Sandiland for collecting the urines of the other two cases for me.

Harrogate.

THE RELATIVE TOXICITY OF CHLOROFORM ($CHCl_3$) AND OF CARBON TETRACHLORIDE (CCl_4).

BY AUGUSTUS D. WALLER, M.D., F.R.S.,
DIRECTOR OF THE PHYSIOLOGICAL LABORATORY OF THE UNIVERSITY OF LONDON.

With a Note on the Danger of Carbon Tetrachloride as a Dry Shampoo by V. H VELEY, D.SC., F.R.S.

THE recent sad death of a young lady under the hands of a hair-dresser while her hair was being treated with a dry shampoo containing carbon tetrachloride has brought to my mind experiments that I made many years ago on the toxicity of chloroform and of carbon tetrachloride as measured by their physiological action upon isolated nerve. I have pursued experiments of the same kind during the last year by a more convenient and expeditious method, in which isolated muscle is used as the indicator, and which affords comparative data from which it is possible to assign a numerical value to the physiological power of anæsthetic and other toxic reagents.

Taking as a standard of reference the toxicity of ordinary ethyl alcohol in a solution of molecular strength (4·6 grammes per 100, i.e., a percentage approximately that of light wines and beers) I find as its physiological equivalent a centimolecular solution of chloroform—i.e., that molecule for molecule chloroform is 100 times as toxic as ethyl alcohol.[1]

Taking now as my term of comparison the toxicity of chloroform at the three strengths m/400, m/200, and m/100 (= 0·3, 0·6, and 1·2 grammes per litre) I find that the toxicity of carbon tetrachloride is considerably greater than that of chloroform at the same three molecular strengths m/400, m/200, and m/100 (= 0·375, 0·75, and 1·5 grammes per litre).

Finally, taking the incriminated hair-wash—which principally consists of carbon tetrachloride—in the same three percentages (0·375, 0·75, and 1·5 grammes per litre) I find that the toxicity of hair-wash is considerably greater than that of carbon tetrachloride at the same three percentages.

I give herewith illustrative records of the comparative effects upon isolated muscle of the three reagents in question —chloroform, carbon tetrachloride, and "hair-wash"—under similar conditions of experiment. To anyone who might be inclined to doubt the cogency of such experiment I would observe that while obviously this test upon muscle does not reveal what strengths of the reagents in question are lethal to the human subject, it does reveal clearly what are their relative toxicities. No one doubts that it would be inconvenient or dangerous to envelop the head in a cloud of chloroform vapour; *a fortiori* it is inconvenient or dangerous to envelop the head in a cloud of carbon tetrachloride vapour; and finally the incriminated hair-wash, of which I am informed many tons have been used by one firm alone, is more poisonous even than pure carbon tetrachloride, and therefore more dangerous still.

Chloroform, as is well known, is a reagent of great toxicity—according to my observations 100 times that of ethyl alcohol. Carbon tetrachloride has, I judge, a toxicity about double that of chloroform. Hair-wash, of which the principal ingredient is carbon tetrachloride, has a still greater toxicity, but the experiments which I have made on this material are not sufficiently numerous to permit me to give a numerical estimate, nor am I able to say what may be the additional substance or substances present in the wash to which that greater toxicity may be due.[2] In any case the carbon tetrachloride present in the wash is, in my opinion, sufficient to cause the death of a healthy person apart from any question of fatty heart or adenoids or status lymphaticus. The cloud of heavy vapour by which the head might be enveloped would necessarily be more or less abundantly inspired, and a very few inspirations of such a highly poisonous vapour would suffice to cause drowsiness or sleep, and might be expected sooner or later actually to cause death.

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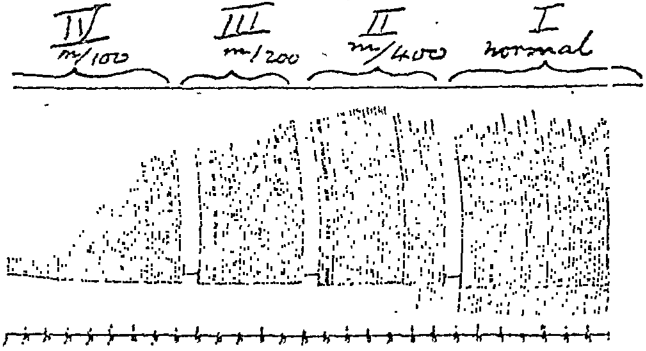
[6] The elimination of chlorides is treated in a paper by J. K. Bryant, Practitioner, 1905, vol. lxxv., p. 168.
work of Javal, Widal, and other Fr
chlorides and consequent retention
cases of nephritis See also F.
Wochenschrift, vol. lvi, March, 1908.

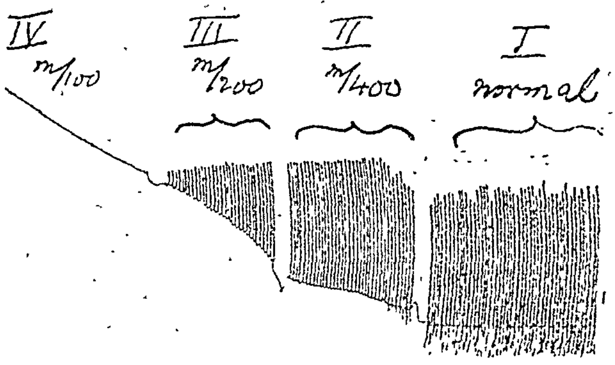
[1] Proceedings of the Royal Society, June 24th, 1909

FIG. 1.



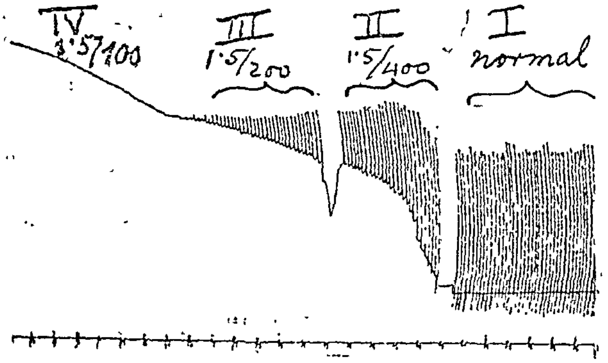
The effect of chloroform; the time is given in minutes.

FIG. 2.



The effect of carbon tetrachloride.

FIG. 3.



The effect of hair-wash as supplied to the trade by a leading wholesale firm.

The Danger of Carbon Tetrachloride as a Dry Shampoo,
by Dr. V. H. VELEY.

The recent fatal accident under the hands of a hairdresser has called public attention to the above matter, and it is stated that at least one other death as well as several cases of faintness have occurred previously. The compound carbon tetrachloride (CCl_4) has in recent years been introduced as a solvent for fats, partly from improvements in its manufacture on a large scale, and partly because it possesses advantages over carbon disulphide and benzine or petrol in that its odour is not very disagreeable and the mixture of its vapour and air is not inflammable.[3] The compound has been introduced into laundries and the hairdressers' trade mainly for ladies who desire to save the time of drying off water. A sample of liquid used for the latter purpose was obtained from a well-known firm for examination in the laboratory of the University of London. Its effect on isolated muscle is described above by Dr. Waller. It was considered that it might be of interest if an approximate chemical analysis was also made.

The liquid was slightly milky; its density at 15·5° C., as compared with water at the same temperature, was 1·5963. It was fractionally distilled by means of a Young's evaporator still-head with three bulbs and gave the following fractions boiling at a barometric pressure of 755 millimetres:—

Portion below 60° C.	= 1	per cent.	(mainly carbon bisulphide).
,, between 60–76° C.	= 5	,,	(mainly carbon tetrachloride).
,, between 76–77° C.	= 88	,,	(carbon tetrachloride).
,, above 77° C.	= 4	,,	(water with scented matter).
Loss	= 2	,,	
	100		

The density of the main bulk of liquid boiling at 76–77° at 15·5° C. was 1·6024. Thorpe[4] gives the boiling point of pure and well-dried carbon tetrachloride as 76·5° C. at barometric pressure 754·3 millimetres, and its density at 0° C., compared with water at the same temperature, as 1·63216, which would correspond to a density of 1·6045 at 15·5° C. The main portion of the distillate was nearly pure carbon tetrachloride. The probable approximate composition of the liquid examined is: carbon tetrachloride, 94 per cent.; water with scent, 4·5 per cent.; and carbon disulphide, 1·5 per cent. (derived from manufacture). A liquid of the above composition would have a density at 15·5° C. of 1·583, which is approximately equal to that found. The carbon disulphide, although present in only small amounts, is itself intensely poisonous and quite sufficient to increase the toxic effect of the hair wash as compared with that of carbon tetrachloride by itself, as appears from Dr. Waller's records. It must further be considered that the vapour of carbon tetrachloride is in round figures 5·3 times heavier than air, so that, notwithstanding any fanning, this vapour, which is considerably more toxic than chloroform vapour, must fall over the face of the person operated upon, and consequently be inhaled.

It is not a matter of surprise that fatal cases should occur and it appears to be most desirable that the legislature should prevent such operations for hair-dressing, as also the use of carbon tetrachloride in laundries except in some closed vessel. A suitable Bill, or an amendment to existing Acts, could hardly be regarded as contentious and might be passed by both Houses of Parliament in a short time as a matter of public urgency.

MEDICAL RELIEF AND PUBLIC ASSISTANCE.[1]

BY C. S. LOCH.

THE report of the council of the Poor-law Medical Officers' Association for 1908–09 may be taken, I think, as the text of this paper. It raises some questions which are questions preliminary to the discussion of administrative changes in regard to the work of district medical officers, and on these its pronouncements may, I presume, be taken as final for the purposes of this meeting. To do this will give point and pertinence to the discussion.

I conclude from the resolutions carried by the council[2]:

1. That the council of the Association are not in favour of free medical relief. In opposing a proposal with which I shall deal hereafter—namely, "to make every medical practitioner a Poor-law medical officer"—they expressed the opinion that such a proposal "would largely tend to provide free medical relief to all poor persons, and to increase rather than diminish the pauperisation of the nation." The council are

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[2] Dr. Veley (vide infra) finds that it is carbon bisulphide.

[3] Cf. Margosches: Der [illegible] Lösungs- bezw. Extractionsmittel in der Ind [illegible] gart, 1905.

[4] Journal of the [illegible] 199.

[1] A paper read at the [illegible] law Medical Officers' Association of Eng. [illegible] ie Guildhall, London, on July 6th, 1909.

[2] THE LANCET, March 20th, 1909, p. 862.

thus opposed to any system that would tend to the provision of free medical relief to all poor persons. 2. I conclude also from the latter part of the sentence I have quoted and other phrases that the cour[illegible] pauperisation that m[illegible] those who are under [illegible] it. They wish to diminish pauperism. 3. Lastly, I conclude that by the statement, "That the interests of the sick State poor would be far better attended to by a special service, the members of which are adequately paid, and whose work was capable of proper inspection," the council refer to a modification of the present system of medical poor relief and do not have in view a new organisation of public health and sanitation *plus* medical relief, which some have suggested. The wording of Resolution (4) as a whole suggests this interpretation. The proposal in question has, no doubt, come before the council. But judging from the silence of the report, I conclude that they do not raise that issue. Accordingly, from the point of view of this discussion I pass it by.

Leaving, then, these preliminary questions, I would state shortly the purport of the report of the Majority of the Royal Commission on medical relief. The Commission aimed at improvement on four points: (1) they desired a more efficient system of public medical assistance; (2) they desired to bring the agencies for the supply of medical relief into some kind of coördination; (3) they wished to prevent any undue deterrence being attached to applications for medical relief; and (4) they desired to promote independence and contributory and provident methods of obtaining advice and treatment.

As to efficiency, what was amiss? The provision of indoor medical relief was often defective, especially in rural [illegible] which was in receipt of outdoor relief was often very insufficient. This is a major cause of dissatisfaction. All outdoor relief should, it was felt, be conditional and provided under close supervision and subject to the fulfilment of all necessary requirements of cleanliness and sanitation. In the case of indoor relief persons suffering from some diseases were allowed to go out of an institution quite improperly. For the sake of the protection of the people at large they should be deprived of their liberty until they were cured. Thus children suffering from ophthalmia should not be allowed to leave with their parents. There was insufficient inspection on the part of the Local Government Board and there was no inspection by any local authority. On boards of guardians there was usually no member who was a medical man and qualified to advise on medical questions or to criticise. There had been a great advance in the supply and organisation of medical relief in urban districts, but much remained to be done. For this and for a better administration generally it was recommended that there should be in each county and county borough, a Public Assistance Authority which should definitely undertake the duties of the supply of medical assistance for the county or county borough, promote an organisation of public and voluntary medical agencies, and meet defects that had come to light. This Public Assistance Authority might appoint a medical assistance committee to undertake this branch of work.

As to deterrence, it seems that the Poor-law infirmaries and medical out-door relief deter less and less, particularly as institutional medical relief becomes dissociated from the workhouse. The deterrence of the franchise should, it is suggested, be withdrawn absolutely. No parent would lose his vote by reason of medical attendance provided for his wife or child. Medical relief is often, it is said, the first step to pauperism. On this generalisation some doubt is thrown, at least in regard to its effect as generally administered. The word "destitution" in the sense in which it is used in relation to the able-bodied, a state approximate to starvation owing to a lack of the necessaries of life, has already by usage assumed a far less stringent meaning in the case of medical relief. It has "come to mean no more than this—viz., inability to provide whatever medical treatment is necessary." As Dr. Downes has remarked to us: "The Poor-law, therefore, has been obliged to provide for the sick on a scale continually advancing with the standard of the care of the sick, and as, with medical progress, this provision becomes more complete, the more unequal in the absence of effective organisation, is the condition of the man who tries to provide it for himself." Another deterrent, it is said, is the application to the relieving officer instead of the district medical officer. This is to be no longer insisted upon. The applicant might go to the district medical officer direct.

So the Commission, having modified, indeed removed, the condition of deterrence very largely, suggest an alternative and submit a plan of promoting an effective organisation to enforce what one may call self-deterrence to enable those who will to provide medical treatment for themselves. They propose that the power of recovering the cost of medical relief should be used in the case of persons who could have afforded to join a provident dispensary and have not done so. They propose also that in these cases investigation should be made—a process that might be set aside in the case of members of a provident dispensary who have a proper wage-limit. Further, they recommend the promotion of provident dispensaries by the Public Assistance Authority on the understanding that "the British Medical Association should suggest a general scheme or scale of fees and wage-limit to be applied by minor local branches as local circumstances may suggest." Agreements would be made with voluntary hospitals for the treatment of special cases in them. The member of the provident dispensary would be allowed to choose his own medical attendant, and through his dispensary doctor might be assured admission to a voluntary or general hospital in certain cases. In fact, generally, the principle is advocated that those who can pay towards their treatment should do so according to their ability, and that for those who have not the means to pay the Public Assistance Authority should pay.

It may be said: "What has this to do with invalid children?" The answer really is: "Everything." If the scheme is adopted, the portal of the provident dispensary or sick club would open the way to them for constant and sufficient medical treatment.

The policy of the report is the careful treatment of the individual case. This policy should be applied to this department of work as well as to others. There would be nothing to deter the parent from seeking medical treatment for the child, for instance. But if he did not belong to a provident dispensary his circumstances would be investigated and he would have to pay if possible. Associated action should prevent failure, whether the child be taken to a voluntary hospital or to a Public Assistance officer. This in abstract is the scheme.

The objections to these proposals formulated by the council are four. I may paraphrase them as follows:—

1. Poor-law medical relief cannot be placed on a provident basis. That relief is for those who cannot contribute, and for no others. But provident methods imply ability to contribute.

2. Not only so, but the plan would be bad for provident institutions. The number of those who apply for Poor-law medical relief is large. If they were treated as members of provident dispensaries, they would flood the dispensaries. The dispensaries supported out of the poor-rates to so large an extent would become Poor-law institutions. The better provident dispensary members would desert them. The poorer dispensary members who remained would be fused with the Poor-law members, and the number of persons dependent on the Poor-law would increase accordingly. We should end by becoming not provident but pauper dispensaries. The State poor would oust the independent members.

3. This would be more expensive. It would mean free medical relief to all poor persons. The work of the medical officer would be of such a mixed character that it could not be inspected properly or tested properly.

4. Applications should, as at present, be made through the relieving officer. This prevents pauperism and removes from the district medical officers a duty which does not, strictly speaking, come within their province.

One sentence I omitted. It is: "That the interests of the sick State poor would be far better attended to by a special service, the members of which were adequately paid, and whose work was capable of supervision." I omitted this because it seemed to me to convey in a great degree what the Commission recommended.

In their scheme[3] Public Assistance takes the place of Poor-law, a change that implies a difference of method. The Public Assistance Authority (or the Medical Assistance Committee) of the county or county borough deals with the large area of the county or county borough. It organises arrangements and makes appointments for districts corresponding to unions in that area. The district medical officers become members of a county service, and indirectly of a State service. "Indirectly" because they are not actually paid by the State but by the county. The obligations imposed on them remain as at present, subject to changes to their advantage which the Commission suggest. But it is suggested by the Commission that parallel to this medical assistance of the Public Assistance Authority, and unavoidably related to it, there must be an organisation of medical relief which will make such relief more effectual, and will also, as far as may be, be so administered as to prevent dependence.

From the point of view of this discussion we may consider that there are two groups. One consists of the members of provident dispensaries and societies and sick clubs; the other consists of the applicants for public (or Poor-law) medical assistance. The problem is how to make medical aid more effectual and at the same time to prevent those who would be inclined to gravitate to public relief adopt some alternative course that would prevent this; and *vice versâ*, to push in to the provident and preventive circle any who might be so assisted. To do this, it is clear the advantages to be obtained by those who provide for themselves in sickness should not be less than those obtainable by outsiders, that is, by those who make no such provision. Sickness is sickness, and in either case has to be cured or relieved. Hence, for instance, the members of the dispensaries should certainly have at least as great advantages by way of special treatment at hospitals or elsewhere as the State system provides for those who apply to it. This is not always so now. But it is made possible by the removal of deterrence on the one hand, and on the other hand by the gradual establishment of a single coöperative medical system throughout the country. Instead of the deterring from free medical relief, the system supports and promotes the method of provident provision, so that it may be more attractive and more advantageous than free relief. Instead of increasing to a greater and greater extent institutions available technically for the pauper only, it gives the provident the advantage of these institutions. The administration of medical relief is no longer cut up into blocks. It becomes in a manner unified, so it is hoped, through the action of the new organising force which is represented by the Public Assistance Authority or the Medical Assistance Committee.

But it is not proposed to merge provident dispensaries and sick clubs in the "Poor-law." District medical officers will not become the officers of "Poor-law" provident dispensaries, if I may so put it. The provident system will be, as it is now, independent of the Poor-law or Public Assistance. Only the Public Assistance Authority, acting on behalf of the community at large, will "play up" to the dispensaries. There will be no large or off-hand transfer of cases to provident dispensaries or sick clubs from the committees of Public Assistance. If among their cases are young people and others who can suitably become members, they will, if possible, be drawn into membership of the provident dispensaries. Roughly, I suppose the division that is actually in force would continue, at least for some time. Chronic patients would tend to go to the Public Assistance officers and institutions, and patients suffering from acute illness would pass to the hospitals. But the division of responsibility would have to be settled according to local conditions. It would appear from this that the objections of the council rest on a misunderstanding. "Poor-law medical relief cannot be placed on a provident basis." Granted. What is proposed is "that medical assistance should be placed on a provident basis"—that is, that the new organisation of the Committee for Medical Assistance, which would deal with various kinds of institutions and agencies, voluntary and other, should have that as its object. Accordingly, in my judgment, the first objection disappears. Next, it is not proposed that the provident dispensaries should be flooded with the chronic (or other) sick poor who seek public relief. Provident dispensaries will continue as they now do. Only the influence of the local medical men and the laity interested directly or indirectly in these institutions would be exercised to promote them on the principle that those who can pay should pay—a principle amply suported by the evidence taken by the Commission. Therefore the evils referred to in the second of these objections would not occur, so far as one can at all foresee what would take place. The objection as to expense also drops. Every man who passes into the "provident" range is putting himself to more expense by his provident payments, but his country he is prospectively putting to less expense.

Lastly, comes the question of the introduction of the relieving officer. The suggestion is made to meet a criticism of the present administration. So far as the provident system supersedes that of the medical relief, the application would be made to the dispensary doctor whom the applicant selects; so far as it does not, some suitable arrangement would have to be made for the non-medical side of the work, the inquiries that have to be made, &c. The object is to avoid what may cause any deterrence, which is wrong or injurious in sickness.

If the scheme of the Commission is put in force and succeeds there will be a constant upmoving of the applicants to the provident or paying range. If we can realise a state of society in which this process is complete, undoubtedly the district medical officers would have no work to do—at least in that capacity. In my opinion, a very large section of the population who now are treated gratuitously could pay towards their treatment, and improvement in this direction would affect the number of persons applying to the Public Assistance Committees in some districts very greatly. But this prospect of district medical officers thrown out of work is, I think—or should I say, I fear?—rather visionary, at any rate in our urban and more populous districts. It is enough if at present we establish a public organisation which will create a good public method of intimate coöperation between the medical profession and the agencies concerned in the care of the sick, and in so doing will promote effectual medical assistance and independence.

AMELIORATIVE MEASURES INDICATED BY SCHOOL MEDICAL INSPECTION.[1]

BY JAMES ROBERT KAYE, M.B., D.P.H. CAMB., F.C.S.,
MEDICAL OFFICER TO THE WEST RIDING COUNTY COUNCIL.

THE question of amelioration is the logical sequence of School medical inspection, and the value of the latter may be regarded as proportionate to the success obtained in remedying the defects discovered. If that is so, then the value of medical inspection will be enhanced in proportion to the comprehensiveness of the scheme in use. School medical inspection indicates the conditions affecting, or influencing, the physical and mental aspects of the scholar, whether healthy or ailing. It should have regard to the premises and their condition; to the methods of teaching in relation to the capacity of the child; to the early detection of unsuspected defects; to the school as a factor in the dissemination of communicable diseases; in short, to the securing of all those conditions of school life best calculated to produce the full and effective physical and mental development of the child. It is not a scheme for the compilation of statistics and anthropometric measurements, nor can any such system be regarded as a sound basis for medical inspection.

It is not my intention to discuss these very interesting items. I prefer to confine my few remarks to the means which may be employed to forward the amelioration or removal of the defects revealed by inspection. In a broad sense, then, amelioration means the process of improving existing conditions, and so in some measure it may be regarded as synonymous with treatment, while at the same time it is associated and bound up with the question of prevention. It is our desire to utilise amelioration in its widest sense, in not being restricted to defects only, but as being concerned also with the improvement of all conditions promoting healthy living in the school period, and with the ultimate object of racial betterment. I assume there can be no objection raised to any attempt to remove faulty and defective physical and mental conditions, and, in fact, we marvel at our apathy in not dealing with this most important question ere now.

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[3] Our main proposals for medical assistance are as follows: The primary responsibility of the Public Assistance Authorities for the inspection and supervision of medical assistance should be clearly recognised and carefully maintained, but meanwhile the arrangements for both indoor and outdoor medical assistance should be periodically inspected by medical inspectors on behalf of the Local Government Board; to this end the Board's staff of medical inspectors should be increased. That the Public Assistance Authority, to assist them in carrying out their functions in connexion with medical assistance, shall [illegible] ch shall be added [illegible] ity council or of [illegible] r branches of the [illegible] alled the County [illegible] the case may be, [illegible] ospitals, county [illegible] and registered friendly societies.

[1] A paper read at the Health Congress at Leeds on July 19th, 1909.

The school population of England and Wales is estimated to be about 6,000,000, and, according to the revelations disclosed by inspections already undertaken, there cannot be at the lowest computation less than 4,800,000 children in our elementary schools who cannot be described as sound in body and mind, and amazingly enough these infirmities are largely removeable if dealt with sufficiently early, and are even preventable. Presumably many of these children will continue to be hampered in their educational progress unless some facilities of relief are afforded. This assertion does not require to be supported by figures or statistics; the past history is enough, and there is the inference that many adults now are suffering from ailments which have originated in school life. Such a remark refers largely to defective hearing and vision, and imperfect bodily formation. It is true that already medical inspection and the consequent remedial work are removing the reproach upon our educational system of the lack of appreciation of the interdependence of the mind and the body, and of the fact so long overlooked that schools are places where human beings are developed—because in its broader aspects school hygiene is indeed an integral factor in the health of the nation.

The Circular 576 issued by the Board of Education in November, 1907, under the powers of the Education (Administrative Provisions) Act ("the Children's Charter"), urges upon the local education authorities in no half-hearted way the desirability of formulating a scheme of amelioration, so that medical inspection will be something more than a mere record of disabilities and defects. Local education authorities have been empowered to make arrangements for attending to the health and physical conditions of the children. It may be here pointed out that already practical amelioration or modification has been in progress in the mode of instruction, particularly of the infant, in the nature and extent of the work, and its distribution in the time-table, in the use of physical exercises, and in the prevention of infectious diseases. It is also admissible to refer to the improvements in the provision of ventilation and lighting, and the placing of those defective or impaired in sight and hearing under more favourable conditions in school. Further, special legislation has provided treatment for the blind and deaf, the epileptic, and the mentally and physically defectives, while the necessitous and poorly nourished have been cared for by the Education (Provision of Meals) Act, passed in 1906.

The principle of amelioration has therefore been fully recognised, and now comes the difficulty of finding the best method of extending this ameliorative treatment to meet the present situation. In attempting to evolve some scheme of amelioration it is necessary at the outset to realise the character of the different diseases attacking scholars. The source of our trouble is not with acute diseases like pneumonia, or even infectious diseases, because these receive due consideration and treatment, nor is it the minor accidents or bruises, but it is a class of affections and diseases more or less chronic in character, such as the parasitic and contagious, dental conditions, defective vision, affections of the eye, ear, and nose, and neglected conditions arising from infantile paralysis and rickets. Due regard must also be taken of the character of the district, because measures which may be applicable to an urban and concentrated population are impracticable in a rural and sparsely populated area.

Reference may here be made to the conduct of the parents in relation to the minor ailments, often erroneously so called. It is in regard to these that many parents often seem most apathetic and careless. Fortunately this neglect is not universal, and even a large proportion of it is due to ignorance or poverty. Apart from ignorance, we must bear in mind the difficulty, the trouble, the inaccessibility of institutional treatment, and the chronicity of the ailment, all helping to engender neglect in the parent.

The importance of prompt remedy, more especially of eye and ear defects, cannot be overestimated, yet it is with these main avenues of knowledge that difficulty is mostly experienced. It is sad to think how much a child with such defects misses simply for want of some attention, besides the leakage of effort on the part of the teacher and the corresponding wastage of public money. Fortunately, we have the definition that attendance is not an attendance in law unless the child is in a fit condition to attend school. Further, we are fortified by the Children Act, 1908 (Section 12), which we welcome, by which penalties may be inflicted on a parent or guardian who refuses to obtain treatment for the defective eyesight or hearing of his child, while Section 122 empowers the school medical officer to remove the verminous affected child for cleansing under certain conditions.

At present, immediately after the school inspection, notice is sent to the parent that his child is suffering from some defective condition requiring medical attention, and children suffering from infectious or contagious or parasitic affections are excluded from school. As yet no prosecution has followed these exclusions for absence from school, but it has been considered in several instances. Other measures have been discussed: subsidy to hospitals and dispensaries, to dentists and Poor-law medical officers, and the establishment of school clinics. These have their advantages, but in an area like the West Riding of Yorkshire the disadvantages preponderate. It might be thought advisable to utilise the district nurse and sundry local agencies, but as the result of an anxious search for a practical and possible scheme it was thought that the interests of the defective child would be best served by the utilisation of the district subcommittees and of local philanthropic help in the formation of "care of children committees." Such a committee would be practically the district education subcommittee, with the addition of special workers if necessary, who would report as to the condition of the individual child entrusted to their care and supervision at the monthly meetings of the district subcommittee and continue to report until the visitor was satisfied or otherwise with the result.

To put it briefly, the aims of these committees by means of home visiting might be set out as follows: 1. To help the parents to grasp the aims and objects of medical inspection, which is, indeed, the welfare of each child. 2. To impress upon parents the gravity of permitting the continuance of defects which in later life so seriously handicap the sufferer and limit his scope of usefulness. 3. To encourage the improvement of home conditions where necessary. 4. To afford proper advice and guidance. Much money is wasted on ill-advised and useless methods of treatment. 5. To help poor cases deserving local philanthropy. 6. To maintain an interest in cases requiring constant attention and treatment over lengthened periods. 7. To secure the utilisation of local agencies, such as district nurse, guilds of help, charitable organisations, surgical aid societies, and hospitals. 8 To keep an eye on mental and physical defectives, and to indicate a suitable course of action. 9. To report, or call the attention of the proper authority to, any cases not receiving consideration. 10. To impress upon parents the desirable dignity of responsibility in dealing with those diseases in their children within their means; in fact, the duty of doing everything possible for the welfare of their children. 11. To inaugurate and establish a crusade of prevention, on the principle that prevention is better than cure, and that many of the ailments of children are preventable. 12. To accentuate the interest of the members of the district subcommittees in the struggle for racial improvement.

In such ways we may expect a healthier and happier race [illegible] hope of a [illegible] ife by un- [illegible] *Besides,* there is the expectation of raising the general level of know- [illegible] curtailing [illegible] employed, [illegible]

Leeds.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Non-ovarian Pelvic Dermoid Tumour.—President's Valedictory Address.

A MEETING of this section was held on July 8th, Dr. HERBERT R. SPENCER, the President, being in the chair.

Miss M. H. FRANCES IVENS, M.S., read a short communication on a case of Non-ovarian Pelvic Dermoid Tumour. She pointed out that dermoid tumours originating in the pelvic connective tissue, non-ovarian in origin, were apparently of infrequent occurrence, and that she had only been able to collect 29 reported cases. Gebhard, when commenting on the rarity of these tumours, pointed out their tendency to be of a somewhat simpler structure than the highly complex ovarian dermoids, hair and teeth being of infrequent occurrence. Their origin was uncertain, and symptoms, when present, had been chiefly due to pressure on adjacent pelvic organs. Repeated attacks of pelvic inflammation had usually occurred. The case recorded was that of a married woman, aged 26 years, nulliparous, who was admitted to the Liverpool Stanley Hospital complaining of severe pelvic pain. It caused her great pain to sit down, and also during defæcation; she had suffered, but to a less degree, from attacks of a similar nature during the past seven years. A fixed, tender, fluctuating swelling of the size of a goose's egg was felt high up in the left fornix, and was thought to be a pyosalpinx or ovarian abscess. A few days later some substance, like thick matter, was said to have been passed per rectum. Laparotomy was performed and the tumour was then found to be beneath the peritoneum and in front of the rectum and to have no connexion with the uterus or appendages. The peritoneum over it was incised and the tumour shelled out and removed entire. No drainage was employed. On examination of the cyst it was found to contain a buttery material of an apple-green colour and very offensive odour, and the cyst wall, which was thick, presented at one point a softened area where it probably had intermittently communicated with the rectum. The cyst was lined with granulation tissue, from which all traces of epithelium had disappeared. The patient, who exhibited some alarming symptoms indicative of toxæmia for the first few days, ultimately recovered and left the hospital well.—Dr. G. E. HERMAN said that he had, in a lecture published in the *Clinical Journal* of August 22nd, 1900, p 277, recorded a case of a pelvic dermoid (not ovarian) which suppurated whilst the patient was recovering from an uncomplicated ovariotomy. In a paper on the Suppuration and Discharge into Mucous Cavities of Pelvic Dermoid Cysts (published in the Transactions of the Obstetrical Society of London, Vol. XXVII., 1885, p. 254) he had collected a number of cases, some of which he thought were certainly not ovarian.—Mr. ALBAN DORAN desired to know Miss Ivens's opinion about the origin of the dermoid. It was not probable that the dermoid elements arose from displaced ovarian tissue, but it seemed very likely to be the homologue of the dermoid cysts occasionally found in the abdomen of men, as in Ord's case recorded in Vol. XLIII. of the Transactions of the Royal Medical and Chirurgical Society, where the tumour was closely related to the bladder and rectum.—Dr. F. H. CHAMPNEYS said that he had seen one similar case. The tumour lay between Douglas's pouch and the sacrum, was about the size of an orange, and had no apparent connexion with either ovary. It came into notice first during labour, caused considerable obstruction, and the patient died from sepsis.—The PRESIDENT asked whether it was possible that the tumour was a degenerated fibroid. He had met with a case in which he had enucleated a tumour per vaginam from Douglas's pouch. The pultaceous contents led him to think it was a dermoid. He had to open the abdomen for oozing, and found that it was a fibroid which had grown from the back of the lower segment. Examination of the tumour with the microscope showed it to be a cystic fibro-myoma. He had several times observed the solidification of the contents of degenerated fibroids (from clotting), and this he thought might be mistaken for the setting of the liquid fat of a dermoid.—Miss IVENS regretted that she had not seen the paper by Dr. Herman on the Suppuration and Discharge into Mucous Cavities of Dermoid Cysts of the Pelvis, and mentioned that her communication referred entirely to retroperitoneal dermoids. In answer to Mr. Doran's question respecting the origin of the cyst, Miss Ivens said she believed it to be derived from fœtal remnants, probably the post-anal gut or projection of the hind gut behind the proctodeal depression. Replying to the President that no hair or skin lining could be seen, she said that the diagnosis rested on the greasy character of the contents, which though liquid on removal solidified to the consistency of butter on cooling. After repeated attacks of suppuration extending over a period of seven years it was unlikely that the original lining of the cyst could be demonstrated.

The PRESIDENT then delivered a valedictory address to mark the close of his term of office as President of the section.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Annual Meeting.—Exhibition of Cases.—Symmetry and Asymmetry and their Effect in the Production of Lateral Curvature of the Spine.—Observations concerning the Blood in Chorea and Rheumatism.—Multiple Abscesses of the Liver.—Etiology and Treatment of Hyperpyrexia in Childhood.—Acute Leucocythæmia.—Treatment of Irreducible Intussusception by Lateral Anastomosis.—Primary Source of Infection of Glands in the Neck.

THE annual meeting of this section was held at Edinburgh on June 18th. The members of the section were received with cordial hospitality by the profession in Edinburgh and were entertained to lunch before the meetings. At the meeting in the afternoon there was first a discussion of cases. Tea was then served, after which papers were read. The official proceedings terminated with a very enjoyable dinner in the evening. On the following day a number of extremely interesting cases were shown at the Edinburgh Royal Hospital for Sick Children to those members who remained in Edinburgh.

At the afternoon meeting Dr. GEORGE CARPENTER, chairman of council, presiding, Dr. G. A. GIBSON showed a case of Patent Ductus Arteriosus in a young woman.—Dr. CARPENTER said that it was seldom such cases were seen clinically. In this condition there might be a purely systolic murmur and not a double murmur. He suggested that an X ray photograph should be taken of the case, as it had been shown that dilatation of the pulmonary artery could be recognised by this means. The malady was not infrequently associated with other congenital malformations.

Dr. JAMES BURNET showed a case of Delayed Rickets.—Dr. G. A. SUTHERLAND asked if the rickets had developed recently or if the condition had persisted from infancy.—Mr. A. H. TUBBY thought that rickets was a disorder beginning in childhood and continuing with outbreaks at intervals afterwards, the causes of which are unknown.—Dr. E. I. SPRIGGS referred to recent work on exercise as a cause of rickets.—Dr. C. J. MACALISTER, Mr. HAROLD J. STILES, and Dr. CARPENTER also discussed the case.

Mr. E. W. SCOTT CARMICHAEL showed a case of Deformity of the Cervical Spine and the Right Scapula in which there was a fold of skin at the side of the neck reaching from the head to the shoulder.—Mr. TUBBY said that it was one of those curious cases known as Sprengel's shoulder. The right scapula differed in shape from the left. The movements of the shoulder were limited. He also suspected the presence of supernumerary cervical ribs. The skin folds, which he had not seen before, showed, he thought, the traction of the skin in the attempted descent of the scapula.—Dr. CARPENTER asked if there were any other deformities, and Mr. TUBBY said that in about one-third of the cases congenital heart disease was associated.

Mr. STILES showed a case after Cholecystenterostomy for Traumatic Obstruction of the Common Bile-duct.—Dr. CARPENTER suggested that as this case had been so successful congenital malformations of the bile-duct could probably be treated surgically.—Dr. JOHN THOMSON said that such cases had been operated on, but the result had always proved that the operation could not possibly have been expected to do good, as it was not a local condition but general disease.—Dr. SPRIGGS suggested that metabolic observations should be carried out in this case as the bile ran straight into the large intestine, and it would be interesting to see how the splitting and absorption of fats were affected by the absence of bile from the small intestine in man.—Mr. HUGH LETT referred to a case of traumatic obstruction of the bile duct which recovered.—Dr. CARPENTER said that operation might be successful in congenital cases in which the stenosis was merely related to the common duct.

Mr. STILES also showed two girls in whom the Ureters were Transplanted into the Pelvic Colon for Incontinence due to Epispadias without Extroversion of the Bladder. The operation had relieved the incontinence and the kidneys had not been affected by the transplanting of the ureters into the colon.

Mr. STILES further showed two cases of Hydrocephalus in which both common carotids had been ligatured with the object of lessening the secretion of cerebro-spinal fluid, with favourable results.—Dr. SUTHERLAND said that they all appreciated any new method of treatment of this disease. In the congenital cases there was usually a continuous flow of cerebro-spinal fluid and no blocking. It was possible to decide whether blocking of the fluid was present by means of lumbar puncture. Certain cases of syphilitic origin recovered under mercurial treatment. The special type where this operation might do good would be where there was a slight increase of secretion over absorption. Mr. Stiles had spoken very guardedly of results, but with these successes he might certainly be encouraged to continue. Dr. Sutherland referred to his former work on subdural drainage and said that he still believed in it and some patients had certainly been cured by it.—Mr. TUBBY said that these cases were the most successful he had seen.—Dr. SPRIGGS said that Mr. H. S. Pendlebury had suggested draining the ventricles direct into the subcutaneous tissues by carrying silk directly from the ventricles, after the manner of Handley's operation for œdema of the extremities.—Dr. SUTHERLAND said that in drainage methods the great difficulty was in keeping open the passages through the cerebral tissues.—Dr. JOHN THOMSON said that in several cases he had seen a very rapid cessation of increase of the size of the head after this operation. In some cases it had done no good. The head sometimes ceased to increase without operation. He thought the operation a justifiable one.—Mr. R. H. PARRY asked if it had been performed when there was spina bifida present also.—Mr. STILES, in reply, said that his first two cases had been most successful. It was difficult to get suitable cases and the children were often very frail and delicate. He had never seen any benefit when the cases were complicated with spina bifida. Hydrocephalus was more liable to occur after spina bifida was cured when the spina bifida had been excoriated or ulcerated. Congestion might be set up from the region of the spina bifida, which got to the fourth ventricle and set up a true secondary hydrocephalus.

Mr. STILES showed cases illustrating Resection of the Diaphysis of the Long Bones for Diffuse Tuberculous Osteomyelitis. The section was shown the long bones—for instance, the tibia—which had been excised subperiosteally, whilst on the couch lay the patient in whom a new tibia had grown.—Mr. TUBBY congratulated Mr. Stiles on his excellent results in these cases, which he regarded as a most important piece of work.

Dr. CARPENTER expressed a vote of thanks to the Edinburgh gentlemen who had shown cases for giving them a most instructive afternoon. Cases had been shown which it would have been worth while coming three times the distance to see. He hoped that it might lead to further coördination between Edinburgh and London in the study of disease in children.—Mr. LETT, in seconding the vote of thanks, heartily endorsed Dr. Carpenter's remarks.

After tea had been served the section reassembled for the reading of papers.

Mr. TUBBY read a paper on Symmetry and Asymmetry and their Effect in the Production of Lateral Curvature of the Spine.—Mr. PARRY asked if it was Mr. Tubby's experience that the left limb was more constantly longer than the right.—Mr. TUBBY thought not.

Dr. MACALISTER read a paper entitled "Observations concerning the Blood in Chorea and Rheumatism." In experiments made upon the length of life of leucocytes in the blood plasma of patients suffering from chorea and rheumatism he had found that when the corpuscles of a patient suffering from chorea were placed in the plasma of another patient suffering similarly they would live nearly as long as the corpuscles of a healthy person would live in another healthy person's plasma, showing that to some extent the blood cells had become immune to the toxin. This being so, if the toxin in acute rheumatism was similar to that in chorea the same evidence of immunity should exist when the corpuscles of the rheumatic patient were placed in the plasma of a patient suffering from chorea. When this experiment was carried out, however, it was found that the lives of the cells were invariably shortened, and it might be inferred from this that at all events some difference existed between the poisons in the two conditions. Dr. Macalister also supported the observation, previously reported by Cabot, that a marked eosinophilia was present in the subjects of chorea, whereas in acute rheumatism he did not find any increase of eosinophile leucocytes. His observations confirmed the suspicion that there was less real association between chorea and rheumatism than was generally thought to be the case, and therefore that chorea might be due to infective toxæmia of a distinctive character.

Dr. R. G. MCKERRON described a case of Multiple Abscesses of the Liver in a Child, Secondary to Appendicitis.—Mr. LETT referred to the difficulty of diagnosing [illegible] present appendicitis was the most probable cause.

Dr. BURNET read a paper on the Etiology and Treatment of Hyperpyrexia in Childhood. Two cases were described. The first was in a child, aged seven years, with a tuberculous family history. The temperature reached 107° F., and was effectively treated by pouring cold water over the head and neck from a jug. The child was well on the next day and no cause was discovered. The second was that of a boy of eight and a half years s[illegible] was being treated with [illegible] The temperature rose t[illegible] adopted, followed by the application to the head of sponges wrung out of iced water. The patient made an excellent recovery. The hyperpyrexia in this case was ascribed to the development of pericarditis, though Dr. Burnet thought that the salicylates might have something to do with it, especially as the high temperature was accompanied by a maniacal state. He was doubtful as to the safety of applying an ice-bag to the chest in such cases, for this might produce a good deal of shock and perhaps collapse. He recommended tepid sponging in the first instance, followed by the application of cold to the head by sponging or ice-bag. Should these measures fail, the cold douche over the head and neck should be used, the head being held over a basin or bath.—Dr. CARPENTER said that he had used ice-bags in pneumonia and had found that they were borne well except when placed over the heart, when the children collapsed at once.—Dr. SPRIGGS said that he had used ice poultices. They should be made quite thin with gutta-percha tissue because of the pressure. He thought that the harm done by an ice-bag over the heart in children was due to the weight. No weight of any kind should be placed on the front of the chest of a child who was ill, owing to the impairment of respiration which was brought about mechanically.—Dr. MCKERRON had not seen collapse produced by treating pericardial affections with ice.—Dr. SIMPSON said that children who liked it could keep it on very well, but in other cases it caused great discomfort. He emphasised the necessity of keeping the child packed in hot bottles while putting on the ice-bag.

Dr. C. P. LAPAGE described a case of Acute Leucocythæmia in a child, aged eight years, the first symptoms of which were headaches, some wasting, and a slight discharge from the ear, with drowsiness and irritability if roused. After these symptoms had lasted for from seven to 18 days, the child [illegible] tingling and numbness of tl[illegible]re was no history of hæmorrha[illegible]y, fainting, or impairment of vision. On admission, three weeks after the beginning of the illness, the temperature was 100° F., and there were chains of enlarged glands in the axillæ, the groins, the anterior triangles of the neck, the glands being discrete and none of them larger than a pea. There was no œdema, otorrhœa, or exophthalmos. A slight degree of vomiting was present. The stools were loose but showed no other abnormality. The spleen reached down to below the brim of the pelvis, and the liver reached to one inch below the costal margin. There were signs of consolidation at the base of the right lung. The reflexes were increased. Kernig's sign was present, but not well marked. Babinski's sign was present on the right side. The blood count gave red corpuscles 1,600,000, white corpuscles 432,000, hæmoglobin 35 per cent., index 1·1. There was an enormous number of large lymphocytes. The blood was whitish in appearance, resembling blood mixed with pus. It was less coagulable than normal. The spleen diminished in size during the last days of life. Post mortem that organ showed early fibrosis. The bone-marrow of the femur and sternum was red in colour; that of the ribs was apparently normal. Pneumonia was present in the lungs, and there were ecchymoses on the visceral surface of the pericardium, sections of which showed infiltration of lymphocytes. A terminal infection with streptococci and staphylococci was found.

Mr. **Parry** read a paper on the Treatment of Irreducible Intussusception by Lateral Anastomosis. This method of treatment was said in the text-books to be only applicable to chronic cases. Two acute cases were referred to, one Mr. Parry's and one Dr. Rutherford's. On the tenth day in Mr. Parry's case no trace of a tumour could be felt, and this was verified by examination. Mr. Parry put forward, first, the simplicity and safety of the method as compared with excision; secondly, that an alternative line of treatment was afforded to that of severe manipulation in irreducible intussusception; and thirdly, the disappearance of the tumour.—Mr. **Stiles** said that it was a most instructive paper and a landmark in the treatment of irreducible intussusception. He had thought a good deal about the subject and had become almost pessimistic. Patients had died after resection when he thought recovery would take place. He had been agreeably surprised that a good many cases had recovered where there had been extreme difficulty in reducing the intussusception and even after splitting the peritoneal coat. The gangrenous cases were very difficult, and his only criticism of the paper was that the treatment was hardly applicable to these. He said that he had had better results when he operated as quickly as possible, and though the children often looked moribund, it was wonderful, if the treatment was properly carried out—no drugs and plenty of saline by the bowel—how they recovered. Once they had got over the shock he was no longer anxious about them. He thought that this method of Mr. Parry was very sound and he would certainly try it in cases where there was a good deal of difficulty in the attempt to reduce the intussusception.—Mr. **George L. Chiene** said that if the intussusception could not be completely reduced owing to the œdema, a way of getting over the difficulty was by wrapping the portion in three or four large pieces of gauze and compressing it for three or four minutes. It was perfectly easy to do and the child made a good recovery.—Mr. **Parry**, in reply, said that with wider knowledge and means of early diagnosis these difficult cases would not be so often met with and the treatment would resolve itself into reduction in the simple way.

Mr. **Scott Carmichael** read a paper on the Primary Source of Infection of Glands in the Neck. By cutting sections of removed tonsils he had found tuberculous foci in a large proportion of cases.—Mr. **Tubby** had not discovered tuberculosis in the tonsils so often. It would be interesting to know how often the tubercle bacillus was found in adenoids, and in the different tissues of the mouth.—Mr. **Parry** referred to the work on the matter by Dr. Nicoll of Glasgow.—Mr. **Lett** felt convinced that the source of infection was often found in the tonsils, and the operation did not seem complete if the focus was left behind.—Mr. **Stiles** said that in those rapid forms of tuberculosis of the glands in which the whole set of glands was involved in a few weeks it was often found that the tonsils were infected. Even if three-quarters of the tonsil were removed, the healing process destroyed the rest of the disease.

Dr. **Carpenter** moved a vote of thanks to the management of the Royal Edinburgh Hospital for Sick Children for the use of the hospital, and he asked Mr. Stiles to convey their appreciation of the privilege.

Reviews and Notices of Books.

Oliver Wendell Holmes. Centenary Biography. By Lewis W. Townshend. London: Headley Brothers. 1909. Pp. 180. Price 2*s.* 6*d.* net.

Many of us remember the evening at the Royal College of Surgeons of England in 1886 when we were asked to meet Oliver Wendell Holmes. His personality dominated the whole room, and 23 years will not have erased from the memory of those present the intense sense of cultivation, intelligence, and refinement which were the note of the whole man. The centenary of his birth falls this month, and will be celebrated in proper manner in Massachusetts, and in England it is obvious that many remember the anniversary. This volume of Mr. Townshend serves as the *consommé* at the beginning of the anniversary feast.

There have been several lives of Oliver Wendell Holmes written—the full biography of Mr. Morse, jun., that by Miss E. A. Brown (1884), and a monograph by that graceful biographist, Mr. Walter Jerrold (1893), but there are aspects of his work and life still untouched in these volumes which Mr. Townshend has presented, and presented very well. His book is so simple and unpretentious, so careful to give as much Holmes as possible (and as little Townshend), and at the same time so free from adulatory hero worship, that all lovers of the great Boston essayist will turn its pages with pleasure. The early years in the old-fashioned suburb of Cambridge are very pleasantly sketched. But why does Mr. Townshend disguise the name of Dorothy Quincy, the kinswoman of Norman extraction? Why does he not comment on some curious errors of reminiscence and history committed by the poet-professor? Holmes claims to have seen the transit of Venus through a telescope when a child and evolved some striking reflections from the spectacle; there was no transit of Venus between the years 1769 and 1874. He describes Admiral Sir Robert Holmes as having taken part in the "old French war in which Wolfe died." But Sir Robert died in 1692, and the services which he rendered in America were against the Dutch in 1664; we are all very well aware just now that the battle of Quebec was fought in 1759. Oliver Wendell Holmes failed to absorb any of the social life of Paris in 1825, which to writers of another type proved of such intense interest. He made no attempt to enter the society which included Thiers, Hugo, Béranger, George Sand, Balzac, and many other stars. Perhaps it is well that he did not; his own particular individuality as a writer might have been merged and lost. This strong individuality constitutes one of the enduring charms in his style, and probably owes its origin to the latter period of his life at which he laid down the scalpel to take up the pen. The "Autocrat" was not published until he was nearly 50 years of age.

The "Autocrat," the "Professor," and the "Poet" spell Holmes to most of the reading world. Their charm has been so transcendent that it is difficult to realise that the author was ever a working physician and a professor of anatomy (of all subjects), on which he continued to lecture until 1882. But he said "he liked the bones best; they were cleanest." Medicine has now given Holmes his proper due for his published views on puerperal sepsis. He maintained in 1843 that it was the result of direct contagion, "and was confronted by the savage and even abusive opposition of the leading obstetricians in the country." Great credit is due to his direct and logical views when we consider that 30 years later one of the leading obstetric professors in New York pronounced the whole subject in a state of hopeless confusion—a confusion which his own writings did little to improve.

We confess to a poor appetite for Holmes's novels, though no one can fail to see the workings in them of his vigorous imagination and the easy grace of his methods of expression. As a novelist he never found himself. The style is often too digressive and too discursive for continued narration, especially (as Mr. Townshend aptly remarks) when a tragedy has to be developed or heightened. This is particularly marked in "Elsie Venner." With the grounds of attack made by critics when it first appeared we have no sympathy now. The critics were alarmed at the doctrine, then new to many, that inherited predispositions limit the sphere of moral responsibility, "that bad men should be treated as if they were insane." There was a strain of Cotton Mather running through the idea, and Holmes himself recognised this when he wrote to James Freeman Clarke that "theology has been largely diabology." These ideas of responsibility are neither new nor startling to-day, and were not quite new then, for they had their analogue in the philosophy of the good Bishop Myriel presented to the world about the same year by a greater master of fiction from his exile in Guernsey. Those of us who are practising physicians know too well that troublesome class of patients who refuse to grow old gracefully; who expect and endeavour to claim from their ageing hearts and deteriorating vessels and nerve cells the work of early and middle life. An excellent prescription for such persons would be the perusal of the "Tea-cups," our author's last book, his gospel of old age. The polished, genial phrases, the mellow, happy estimate of life, recall the now neglected commonplace books of Southey, the "Omniana" and "The Doctor." Such aftermaths of a literary harvest are rare and deserve study when they present such distinction.

Hypnotism. By Dr. ALBERT MOLL. Translated by A. F. HOPKIRK. London: The Walter Scott Publishing Co. 1909. Pp. 559. Price 6*s.*

HYPNOTISM, both on account of its mysterious nature and because of its frequent exploitation by the charlatan, has in some ways acquired an unsavoury reputation in the world of medical science. Indeed, it is within a comparatively few years that the subject has again been seriously approached with a view to its further elucidation, and it yet remains one which is almost unknown to the large mass of the profession. If hypnotism is used, as it most certainly ought to be, for therapeutic purposes alone, it is of importance that its methods of induction, the cases for which it is suitable, the results which may be expected, and the limitations which surround it should be well known. The book at present under review is one the perusal of which will inform the practitioner upon these various points. It is written with an enthusiasm which impels the author to present the case for the employment of the method with force and skill, but it is also written in a spirit of scientific criticism and with a breadth of view which is worthy of all praise.

After a brief but interesting history of the phases through which hypnotism has passed, the author devotes a large part of his work to the symptoms of the hypnotic state. It is astounding how polymorphic these are, and indeed they appear to be hardly ever identical in two different persons. The chapter on symptoms reads exceedingly like a chapter on the symptoms of hysteria, but Dr. Moll denies that hysterical or nervous patients are particularly susceptible to hypnotism, and he here brings himself into conflict with those who assert that hysteria is a condition of morbid hyper-suggestibility, and that hypnotism by inducing a condition of hyper-suggestibility is in fact inducing hysteria. An interesting chapter on post-hypnotic suggestions reveals the therapeutic possibilities of hypnotism as well as its dangers in unscrupulous hands, and Dr. Moll is most emphatic in his insistence that treatment by this means should be solely in the hands of scientifically trained medical men. The physician alone is in a position to establish a diagnosis, and to thereby determine the indications and contra-indications for treatment in any case. The effect of treatment must be watched and the physician must decide whether or no treatment must be continued. So also it is the physician alone who can determine whether hypnotism is to be supplemented by other methods, and what those methods are to be. For these reasons therefore it is of the highest importance that the therapeutic use of hypnotism by ignorant laymen should be opposed. On the other hand, Dr. Moll is not of opinion that every medical man is fit to undertake the hypnotic treatment of patients, and he considers that the practitioner of hypnotism should have a special faculty both for the induction of hypnosis and for the proper use of the state by practical suggestion. With technical skill and care there is, according to Dr. Moll, no danger of rendering a subject more liable to morbid nervous states, and, moreover, less danger than in many methods of treatment that are termed harmless. It is quite possible that hysteria may occasionally be induced, but such cases are exceedingly infrequent. Even in organic disease hypnotism is not without its uses. The pains of tabes and other organic diseases have been diminished and abolished, while the vomiting of pregnancy and of certain diseases has been alleviated. In many organic diseases the functional disturbance extends much further than the direct influence of the organic lesion would appear to warrant, and it is probable that it is this class of symptom for which hypnotism may be useful.

The book concludes with a chapter on occultism of various manifestations. Occultism has a surprising vogue in these latter days, and it is one of the most astounding features of our educated times that there seems to be an increasing tendency even among the cultured towards the most puerile superstition. Dr. Moll notes how investigators, who in their own lines of work are of world-wide reputation, may be deceived by the clever charlatans who exploit certain so-called occult phenomena. He draws the moral that humility is a supreme virtue in the man of science, while a jargon suggesting familiarity with the unknown and unbending dogmatism are the characteristics of the professors of the occult. In hypnotism, as in other branches of psychology, we have still to recognise that the inner connexion of the body with the mental processes is utterly unknown to us, and that in the exploration of the mystery we must impose severe conditions of criticism and must accept no facts on authority without proof.

As a thorough exposition of a difficult subject we can cordially recommend this work to our readers.

A Manual of Clinical Diagnosis. By JAMES CAMPBELL TODD, Ph.B., M.D., Associate Professor of Pathology, Denver and Gross College of Medicine, University of Denver. Illustrated. London and Philadelphia: W. B. Saunders Company. 1908. Pp. 319. Price 10*s.* net.

THE author states in his preface that the aims of this book are to present a clear and concise statement of the more important laboratory methods which have clinical value, and to act as a brief guide to the interpretation of results. It is designed for the student and practitioner, not for the trained laboratory worker. On the whole Dr. Todd has succeeded in carrying out the above intentions. The methods offered are for the most part practical, but occasionally the tests selected are not the simplest or most convenient for the routine work of the consulting-room.

The chapter on the examination of the sputum contains a good account of the microscopic examination of unstained specimens. Gabbet's method is recommended for the detection of tubercle bacilli, but although the technique may be simple, nevertheless, on account of the difficulty in ascertaining when the decolourisation is complete, we doubt whether it is the most suitable process for practitioners not accustomed to laboratory methods. The chemical examination of the urine is well described, and the qualitative and quantitative tests for the normal and abnormal constituents are accurately given, but the qualitative tests are more complicated than those usually adopted in this country. The microscopic examination of urinary sediments is discussed at length and illustrated by many excellent diagrams.

The chapter dealing with examination of the blood is one of the best in the book; the methods employed in the enumeration of the erythrocytes and leucocytes are clearly explained, and the deductions to be derived from a study of the various forms are fully laid down. Due attention is also given to serum reactions, and the necessary technique is adequately described. The discussion of the opsonic index is, however, scarcely up to date, but if a future edition of the work is demanded this defect can be remedied. The laboratory methods which may be of aid in the diagnosis of disorders of the stomach are also set forth, the chemical tests as well as the microscopic appearances of the discharges being described.

The book is produced in an attractive manner; the type is clear and not trying to the eyes. The illustrations are numerous and form a valuable addition to the letterpress. We do not consider, however, that the work as a whole has any marked superiority to many books on the same subject already existing.

Pye's Surgical Handicraft: a Manual of Surgical Manipulations, Minor Surgery, and Other Matters connected with the Work of House Surgeons and Surgical Dressers. Revised and largely re-written by W. H. CLAYTON-GREENE, B.A., M B., B.C. Cantab., F.R.C.S. Eng., Surgeon in Charge of Out-patients, St. Mary's Hospital; Lecturer on Anatomy in the Medical School. Fifth edition, with 343 Illustrations and Plates newly drawn for this edition. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1909. Pp. 592. Price 12*s.* 6*d.* net.

THIS is a practical text-book on the important subject of surgical handicraft—a subject so full of pitfalls to those who have not had the advantage of holding a resident appointment in a general hospital. Mr. Clayton-Greene brings his subjects well up to date, and it may be safely said that the book could only have been compiled by a writer of extensive surgical attainments and teaching ability. The sections dealing with the treatment of fractures, dislocations and sprains, splints, retention and suppression of urine, the use of catheters and other instruments in the bladder, aspiration and tapping of the bladder, hernia, intestinal obstruction, and acute abdominal lesions are particularly well done, and in most of the situations Mr. Clayton-Greene shows clearly the best procedure to be adopted. There are also some interesting sections dealing with special subjects, such as minor surgery of the eye, which is ably described by Mr. Leslie Paton; and diseases of the ear, nose, throat, larynx, and head injuries, each being treated in separate chapters by Mr. H. W. Carson. We also welcome thorough articles dealing with the treatment of the teeth and their extraction, by Mr. Norman G. Bennett; with the treatment of cases of poisoning and urine testing, by Dr. W. H. Willcox; with anæsthesia, by Dr. J. Blumfeld; and with skiagraphy, by Dr. A. Simmons.

The book is well illustrated, and the type is excellent. The index is very satisfactory—always a matter of considerable importance in a work for emergency practice. We only regret that the author has not carried us further into the domains of operative surgery, but the late Mr. Walter Pye originally limited the sphere of the book to work met with in the practice of house surgeons and dressers in surgical wards. We can with confidence recommend this book, and it should find a permanent place in all hospitals—civil and military, naval and colonial—as well as in the library of all practitioners who may wish to keep their "surgical handicraft" in line with modern teaching.

Principles and Methods of Physical Education and Hygiene. By W. P. WELPTON, B.Sc., Master of Method in the University of Leeds. London: W. B. Clive, University Tutorial Press, Limited. 1908. Pp. 401. Price 4*s.* 6*d.*

IN this book the claims of physical training to be regarded as an essential part of the whole scheme of education are fully set forth, and its elevation to something more than a mere practice of muscular movements is discussed. The author claims that the three aspects of education—physical, intellectual, and moral—are intimately related to one another, and insists that they should not be regarded as separate and distinct, but should be coördinated in such a way as to evolve capacity and promote efficiency.

An introductory chapter contributed by Professor Welton of the University of Leeds gives an interesting history of physical education traced from the customs and observances of savage tribes down to the organised physical exercises of the present day, and includes short descriptions of the educational systems in Greek, Roman, and mediæval times written in admirably lucid style. After outlining the scope of his subject, the author devotes several chapters to physiological considerations, with special emphasis on the structure and functions of the nervous system. Fatigue is also considered, and its importance in relation to the organisation of school work, to sleep, and to recreation is discussed. Physical training by means of exercises, games, systems of drill, and gymnastics is dealt with, and useful information is given in a form likely to be of value to those engaged in teaching. Cleanliness, ventilation, and the right attitudes for working and writing are all carefully treated of. A chapter on the care of the eye and another on abnormalities contain directions which should be of service to teachers in regard to the recognition of visual defects and also in detecting cases of illness to which the attention of the school medical officer should be drawn. A table showing the incubation and quarantine periods of the common infectious diseases is also included. The book is carefully written and should be useful, for it abounds in practical suggestions.

LIBRARY TABLE.

Diet in Infancy. By A. DINGWALL FORDYCE, M.D. Edin., F.R.C.P. Edin. London and Edinburgh: William Green and Sons. 1908. Pp. 174. Price 3*s.* 6*d.* net.—This little book contains within its 174 pages a large amount of sound information. The author in his preface says that his book "aims at being of practical utility to practical men working among children," and, in our opinion, his aim will be attained. The book is very simply written, and may shortly be described as a series of canons upon what to do and what not to do. It commences with some general considerations, in which stress is laid by the author upon the fact that the exact composition of mother's milk is unknown, and that although the milk of other mammals can be manipulated so as to approximate superficially to the composition of maternal milk, yet "no manipulation can artificially evolve the inherent peculiarities of that milk." In the section on Substitutes for Mother's Milk, Dr. Fordyce naturally discusses the question of proprietary foods. He is not blind to their occasional usefulness, but he rightly concludes: "When all is said and done, proprietary foods must be considered third-rate food for the infant: in the first class we have mother's milk, and in the second class cow's milk." Parts III. and IV. of the book deal with artificial feeding both in the case of the healthy and the sick infant. It is laid down as an axiom that "cow's milk, boiled (scalded), and suitably modified is the best obtainable artificial food for the infant." In regard to the feeding of sick children, in a passage under the head of improper feeding, Dr. Fordyce makes the following excellent remark: "The most serious element in improper feeding is irregularity. This irregularity is almost never of the nature of too few feeding times; it practically always consists in their over frequency. For infants who are not seriously ill and who are capable of taking a milk mixture of a strength not less than 1 part of milk to 2 parts of water two hours must be the minimum limit between feeding times. It is obviously advisable that the call upon the digestive functions should not be an absolutely continuous one; and more particularly is this the case when an unnatural diet, such as cow's milk, is being administered—and being administered, it may be, of a totally unsuitable composition." This passage is a veritable *memoria technica* for the science and art of the artificial feeding of infants whether healthy or sick. In his consideration of special digestive disorders Dr. Fordyce is eminently sensible. We are glad to see that he insists upon the value of opium for the infant in suitable cases. He recommends the use of it in the form of Dover's powder in doses of from one-sixth to half a grain, "administered under strict superintendence of the varying clinical condition." Finally, he concludes the main portion of his book with a reminder of a matter which is in these days too often forgotten, and that by the rich more often than by the poor—namely, that "mothering" is of great value to the healthy infant and still more so to the sick one. As he well says, "The needs of the infant are not satisfied with occasional feeding and occasional tidying-up." The remainder of the volume is taken up with various appendices mainly of a statistical or analytical nature, although the first and longest of them deals with the question of the complications and disabilities of prolonged lactation and the question of rickets. We are glad to congratulate Dr. Fordyce upon an eminently practical and useful little book.

Practical Guide to the Diseases of the Throat, Nose, and Ear for Senior Students and Junior Practitioners. By WILLIAM LAMB, M.D., C.M. Edin., M.R C.P. Lond., Surgeon to the Birmingham Ear and Throat Hospital. Second edition. London: Baillière, Tindall, and Cox. 1909. Pp. 322 and 55 illustrations. Price 7*s.* 6*d.* net —This edition has been materially enlarged both in scope and in substance. Instead of being confined almost entirely to the examination of patients, as was its predecessor, it now deals more extensively with diagnosis and includes also the treatment of diseases of throat, nose, and ear. Dr. Lamb does not confine himself to mere statements but mostly gives the reasons which he believes to be the correct explanation of the facts, such as why the receding chin, the highly arched palate, protruding teeth, and V-shaped alveolar arch are found in mouth-breathers. These explanations are always plausible and often original. The addition of illustrative cases, though not one we commend in a text-book, are here certainly put to most excellent use and are employed to their best advantage. The chapters on treatment are all of them good and give general or specific directions according to the necessities of the case. Dr. Lamb has added much and well to the scope of his book and for students it will prove a most efficient foundation on which to build up a fuller knowledge.

Transactions of the American Otological Society. Vol. IX., Part 1. New Bedford, Massachusetts: The Mercury Publishing Company. 1908. Pp. 233.—This number, which deals with the events of the forty-first meeting of the society, opens with two obituary notices in memory of Daniel Bennett St. John Roussa and John George Miller The first portion of the meeting was devoted to the exhibition of new instruments and card specimens, after which a discussion on otosclerosis, covering practically the whole range of the present knowledge of the disease, was opened by Dr. T. J. Harris with regard to etiology, by Dr. W. Soher Bryant with regard to pathology and prognosis, and by Dr. G. E. Shambaugh with regard to symptoms and diagnosis. Then follows a paper by Dr. B. H. Potts on Non-purulent Labyrinthitis as a Complication of Acute Middle-Ear Suppuration, based on three cases of this rather unusual condition. Dr. B. A. Randall reported a case of fatal sepsis after fracture of the temporal and occipital bones; Dr. E. Gruening a case of thrombosis of the left lateral sinus followed by thrombosis of both the cavernous and other sinuses of the dura mater; Dr. E. B. Dench a case of acute suppurative labyrinthitis; and Dr. Leland a case of double otitis media, complicated by extradural and intradural abscess. Dr. Charles J. Clipp reported a case in which double optic neuritis and paralysis of the left external recti occurred. Dr. Crockett reported a case of vertigo, in which relief but not complete recovery was obtained by removal of the stapes. A brief historical and critical review of operations for the cure of chronic middle ear suppuration was contributed by Dr. Noble H. Pierce, and Dr. C. H. Snow made further observations about the necessity for operation. Dr. Percy Friedenburg read a paper in which he described a few of the acoustic functions of the labyrinth, and concluded with an extremely able and critical review of our present knowledge of static and dynamic equilibrium. Dr. Shambaugh read a paper on epithelioma of the sulcus externus.

JOURNALS AND MAGAZINES.

The Edinburgh Medical Journal.—In the July issue Dr. Byrom Bramwell records the post-mortem findings in a case of pseudo-hypertrophic paralysis; the spinal cord showed curious fissures and disturbances of the normal arrangement of grey and white matter. These appearances are regarded by van Gieson as artefacts due to post-mortem changes, but it is remarkable that they were present in three cases out of four of this disease observed by Dr. Bramwell, and only in four others of all the necropsies made by him. Dr. Angus MacGillivray writes on the diagnosis and treatment of pneumococcal and diplobacillary hypopyon keratitis; and Mr. Alexander Don on cancer of the penis: Dr Alexander Goodall records his experience in investigating the physiological action of extract of ergot, which appears to have a distinct action on the uterus apart from that exercised on the blood-vessels, and Dr George A. Pirie describes a year's work with X rays in diagnosis at the Dundee Royal Infirmary.

The Dublin Journal of Medical Science.—In the July number Mr. Leveson Gower Gunn narrates a series of cases of post-operative tetanus which occurred in spite of antiseptic precautions. The exact source of infection was not discoverable, but lay probably in the cat-gut employed. It was not possible to isolate the bacilli from the cadavers. Dr. Richard L. Sutton of Kansas city, U.S A., describes the use of "snow" of carbon dioxide as a cautery in cases of cutaneous disease, especially in nævi and lupus erythematosus, and gives a bibliography of papers dealing with this mode of treatment; and Mr. E. Hastings Tweedy contributes a first instalment of his report of the *Rotunda Hospital.*

The Birmingham Medical Review.—A lecture by Dr. David Fraser Harris on the history of the discovery of the circulation of the blood—the first of a course on the Essentials of Physiological History—gives an interesting account of the development of knowledge on this subject from Hippocrates to Harvey. Mr. Smallwood Savage writes on tuberculous salpingitis, and narrates two cases of the affection, in one of which the infection seemed to have arisen from the intestine and in the other to have been conveyed from some distant focus by the blood-stream.

The Medical Chronicle.—A valuable paper on physiological variations in children by Dr. James Kerr appears in the July issue of this journal. He points out the correlation often present between physical and mental defect in children attending public elementary schools, and calls attention to such conditions as word-deafness, and word-blindness which cause an appearance of intellectual deficiency. He regrets the report made by the Commission on the Care of the Feeble-minded, which tends to lump all mental defects together and to discourage due classification for purposes of treatment. Dr. R. T. Williamson discusses the geographical distribution of diabetes mellitus and brings out some curious facts. The death-rate from this malady is rising in England and in most highly civilised countries, but the cause of this incidence is not entirely clear. An annotation on this paper will be found in our issue of July 24th (p. 244).

The Liverpool Medico-Chirurgical Journal.—The current (July) number of this periodical contains, as usual, many interesting papers. We can only mention a few. The value of tuberculin as a remedy is discussed in two articles, one by Dr. George A. Crace-Calvert and the other by Dr. Henry Clarke and Mr. Charles E. P. Forsyth. In both favourable opinions are expressed, and the oral mode of administration is considered to be efficacious. Dr. N. Percy Marsh and Dr. Owen T. Williams write on the treatment of cerebro-spinal meningitis and advise the use of Flexner and Jobling's serum and of lumbar puncture. Dr. John Hay records two cases of recurrent hæmoptysis in non-tuberculous patients, one being a case of angioneurotic œdema and the other of a pulmonary abscess cavity; and Dr. Frederick P. Wilson discusses the sero-diagnosis of syphilis, which he considers a valuable means of recognising the disease.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on July 29th, Sir R. DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following candidates having passed the required examinations were admitted Members of the College:—Edwin Greaves Fearnsides, M.A., M.B. Cantab., L.R.C.P.; W. Errington Hume, M.B. Cantab.; James Lindsay, M.D. Edin.; Henry MacCormac, M.B. Edin.; Walter Malden, M.A., M.D. Cantab.; Arthur Hallowes Miller, M.B. Cantab., L.R.C.P.; Patrick Thomas O'Sullivan, M.D. Royal Univ. Irel.; Leonard Gregory Parsons, M.D. Lond., L.R.C.P.; and Ivy Evelyn Woodward, M.D. Lond.

Eighty-six candidates having passed the necessary examinations were granted Licences to practise physic, and 17 candidates were recommended by the examiners for the Diploma in Public Health.

The PRESIDENT announced that he had received a communication from the Secretary of State for Home Affairs requesting him to nominate a delegate to represent this country at the International Medical Congress to be held at Budapest this year. The President nominated Dr. F. W. Pavy, who had already been requested to represent the College on this occasion.

The following communications were received:—1. From the secretary of the Royal College of Surgeons of England reporting proceedings of their Council on July 8th. 2. From the University of Edinburgh in reference to the examination for the Murchison memorial scholarship, stating that as a result of the recent examination the scholarship had been awarded to Mr. Alexander Gibson, M.A., M.B., *proxime accessit* Mr. J. G. Greenfield, M.B., Ch.B.

The following list of Censors, other College officers, and examiners was adopted by the College:—Censors: Sir William Henry Allchin, Dr. Francis de Havilland Hall, Dr. Seymour John Sharkey, and Dr. James Kingston Fowler. Treasurer: Sir Dyce Duckworth. Registrar: Dr. Joseph Arderne Ormerod. Harveian librarian: Dr. Joseph Frank Payne. Elected members of the library committee: Dr. Norman Moore, Dr. William Osler, Dr. Arthur Francis Voelcker, and Dr. Charles Arthur Mercier. Curators of the museum: Sir William Henry Allchin, Dr. Seymour John Sharkey, Dr. William Hunter, and Dr. Frederick William Andrewes. Finance committee: Dr. Francis Henry Champneys, Dr. George Newton Pitt, and Dr. Herbert Pennell Hawkins. Examiners: Chemistry—Mr. W. Holdsworth Hurtley and Mr. George Senter. Physics—Dr. Dawson F. D. Turner and Mr. Alfred Henry Fison. Practical pharmacy—Dr. Arthur Philip Beddard, Dr. Robert Arthur Young, Dr. Edmund Ivens Spriggs, Dr. William James Fenton, and Dr. Alfred Ernest Russell. Physiology—Dr. William Dobinson Halliburton and Dr. Marcus Seymour Pembrey. Anatomy—Dr. Christopher Addison. Medical anatomy and principles and practice of medicine—Dr. Wilmot Parker Herringham, Dr. Richard Grainger Hebb, Dr. Sidney Harris Cox Martin, Dr. Herbert Pennell Hawkins, Dr. Humphry Davy Rolleston, Sir Edwin Cooper Perry, Sir Hugh Reeve Beevor, Dr. James Galloway, Dr. Wilfred James Hadley, and Dr. Laurence Humphry. Midwifery and diseases peculiar to women—Dr. Herbert Ritchie Spencer, Dr. Arthur Hamilton Nicholson Lewers, Dr. George H. Drummond Robinson, Dr. Arthur Francis Stabb, and Dr. George H. A. Comyns Berkeley. Public health—Part I., Dr. William Henry Willcox; Part II., Mr. Alexander Grant Russell Foulerton. Murchison scholarship—Dr. David Bridge Lees and Dr. Horace George Turney.

The following awards were recommended by the Council: 1. The Baly medal, for distinction in the science of physiology, to Emil Fischer, Ph.D., Professor of Chemistry, University of Berlin. 2. The Moxon medal, for distinction by observation and research in clinical medicine, to Sir William R. Gowers, M.D., F.R.S.

A report was received from Dr. Norman Moore on the Darwin commemoration at Cambridge, June 21st to 25th.

A report was received from Dr. J. H. Habershon on the celebration of the 350th anniversary of the foundation of the University of Geneva, July 7th to 10th.

A report was received and adopted from the Standing Committee on Beri-beri after a meeting held on May 19th last.

The annual report of the Imperial Cancer Research Fund was received and adopted. Dr. Sidney H. C. Martin was re-elected a member of the executive committee of the above fund.

A report, dated June 29th, from the Committee of Management was received and adopted. The report recommended:—

1. That the London County Council Asylum at Long Grove, Epsom, be added to the list of lunatic asylums recognised by the Examining Board in England.

2. That the Western Reserve University, Cleveland, Ohio, United States, be added to the list of institutions at which the curriculum of professional study required for the diplomas of the Royal Colleges may be pursued, and whose graduates may be admitted to the Final Examination of the Examining Board in England on production of the required certificates of study.

A second report from the same committee, dated July 13th, was received and adopted. The committee recommended that Mr. R. J. Godlee be appointed visitor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

The Registrar (Dr. J. A. Ormerod) was elected a member of the committee of management in place of Dr. E. Liveing, who has resigned.

On the motion of the SENIOR CENSOR (Dr. NORMAN MOORE), seconded by Dr. P. W. LATHAM, Dr. E. Liveing was elected by acclamation Emeritus Registrar.

Dr. LIVEING expressed his thanks to the College.

The annual report of the Library Committee, the quarterly report of the College Finance Committee, and the annual report of the Curators of the Museum were received and adopted.

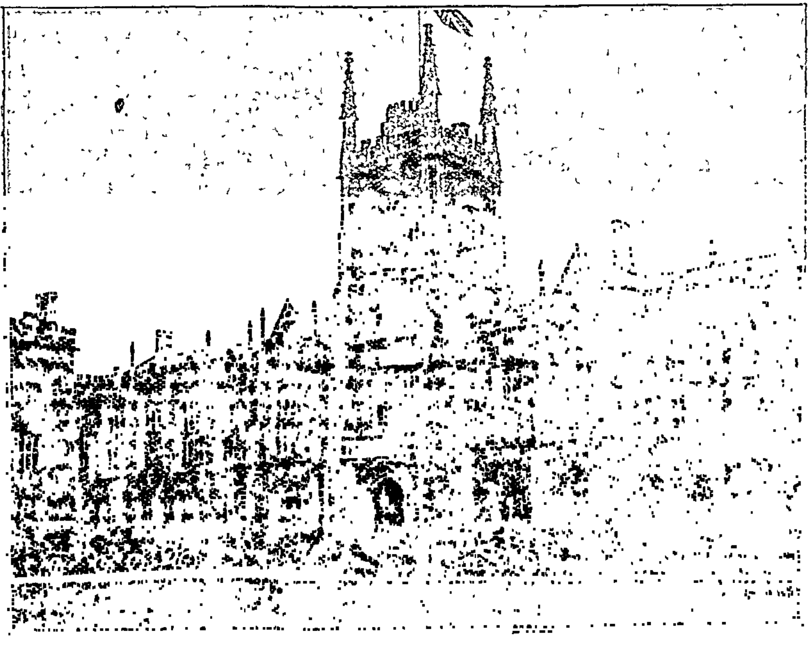
The books and other publications presented to the library during the past quarter were received and the thanks of the College returned to the donors.

After some further formal business the PRESIDENT dissolved the Comitia.

THE BRITISH MEDICAL ASSOCIATION.

SEVENTY-SEVENTH ANNUAL MEETING AT BELFAST.

IN reviewing the recent meeting of the British Medical Association at Belfast it will, we think, be conceded that the scientific fruits were well up to their usual standard, and there is little doubt that those aspects of medicine in which the intelligent coöperation of the public is desirable, notably the progress of public health, attracted an unusual amount of popular attention in the district in which the Congress was held. This was due in no small degree to the energetic attendance of the Earl and Countess of Aberdeen at so many of the gatherings of the week, for they not only honoured with their presence the four addresses delivered in plenary congress but assisted at several of the sectional meetings, notably at those in which some problem connected with tuberculosis came up for discussion. Indeed, Lady Aberdeen's zeal for the anti-tuberculosis crusade did not confine itself to the walls of Queen's University, but between the acts of an interesting performance of folk plays given in the opera-house by the Irish Literary Society to the ladies of the Congress and their friends whilst the annual dinner was in progress elsewhere, the founder and President of the Women's National Health Association of Ireland gave a lecture on the origin and progress of that admirable movement, illustrated by lantern slides showing the work that is being done by its travelling museum, caravans, lecturers, and pamphlets.



Queen's University, Belfast, in which the meetings of the British Medical Association were held.

The excellent and spirited Address in Obstetrics by Sir John Byers, which we print on another page, was delivered in the University library at the last of the scientific gatherings attended by the Lord Lieutenant and Lady Aberdeen. At its close, Sir William Whitla, the President, moved a vote *of warm thanks for the distinction which their Excellencies'* presence had given to the whole of the meeting, a motion which was carried by acclamation, and in replying His Excellency paid a high compliment to Sir John Byers's discourse, as having been "instinct not only with scientific knowledge and research, but also with hopefulness for the future." Subsequently Sir John Byers and Lady Byers entertained at luncheon the same two distinguished honorary members of the British Medical Association with some 40 other guests, who included the Lord Mayor and Lady Mayoress of Belfast, Sir Lauder Brunton, Sir Malcolm Morris, Sir Almroth Wright, Sir William J. Thompson, Sir James Barr, Professor E. Fuchs (Vienna), Professor A. J. Smith, the Master of the Rotunda, Dr. T. N. Kelynack, Professor H. Corby, Professor Cullen (Baltimore), Mr. P. J. Freyer, Mr. J. S. Bryars, Dr. H. Chambers, Dr. C. Magill, Mr. Guy Elliston, the Editor of the *British Medical Journal*, and the representative of THE LANCET.

The annual summer meeting and luncheon of the Irish Medical Schools and Graduates' Association was held at the Medical Institute, Belfast, on July 28th. There was a large attendance of members and guests, including ladies. Sir Charles Cameron (Dublin) was in the chair, and amongst those present were the Rev. Dr. T. Hamilton (Vice-Chancellor, Queen's University, Belfast), Mr. Sinclair White (retiring President of the British Medical Association), Dr. E Rayner (honorary treasurer), Dr. Dawson Williams, Dr. J. A. Macdonald, Mr. H. A. Ballance, Mr. R. H. Kinsey, Mr. J. Smith Whitaker, Dr. A. Cox, Mr. Guy Elliston Mr. Shepherd

Boyd, Dr. R C. Buist, Dr. P. Vernon Dodd, Dr. R. Fegan, Dr. J. H. Ewart, Dr. S. Agnew, Rev. Dr. R Seaver, Dr. J. J. Macan (chairman of Council), and Mr. T. Hobbs Crampton and Dr. W. Douglas (honorary secretaries).

The annual dinner of the British Medical Association was held in the Ulster Hall on Wednesday, July 28th, the President of the Association in the chair. A distinguished company attended the dinner, including the leading members of the Association, a representative gathering of local medical men, and many prominent Belfast citizens. After the toast of "The King" had been duly honoured the President rose and, turning to the Earl of Aberdeen who sat on his right hand side, proposed the toast of "The Lord Lieutenant and Prosperity to Ireland." After referring to the labours of the Lord Lieutenant in the domain of preventive medicine in Ireland the President announced that the Council of the Association had decided to elect the Countess of Aberdeen as an honorary member of their Association in recognition of her successful efforts in the prevention of tuberculosis. The Lord Lieutenant, in reply, thanked the Association for the distinction conferred on the Countess, and referred to the report of the Registrar-General of Ireland, which acknowledged the campaign against tuberculosis carried on through the agency of the Women's National Health Association of Ireland. The next toast was that of "The British Medical Association," which was eloquently proposed by the Bishop of Down and Connor and Dromore. He sketched the rise of the Association and eulogised the labours of its members. He particularly praised the hopefulness of medical men and described their cheerful optimism as one of the splendid things which gilded life with hope. This toast was acknowledged by Dr. J. A. Macdonald, the chairman of the representative meeting, who in the name of the Association thanked the people of Belfast for the generous welcome its members had received. The next event of the evening was not on the official programme, but it certainly elicited the most hearty acknowledgment, everyone cheering and acclaiming Dr. T. S. Kirk as he formally presented a silver cup, the gift of the Ulster Medical Society, for a golfing competition for members of the Association to be held annually. The cup, which is an accurate copy of the famous Ardagh Chalice, a beautiful and famous piece of old Irish silver, was accepted by the President in a graceful speech of thanks to Dr. Kirk, the President of the Ulster Medical Society. The next toast was that of "Our Guests," and this was entrusted to Sir Peter R O'Connell, who extended a hearty welcome to the numerous guests present. This toast was acknowledged by the Lord Mayor of Belfast, by Professor J Fehling of Strasburg, and by Dr. D. B. Delavan of New York. Sir T. Clifford Allbutt then proposed the health of the President, and after the President had made a suitable reply the health of Dr. Cecil E. Shaw, one of the honorary secretaries, was enthusiastically drunk and briefly acknowledged by that gentleman.

The Temperance Breakfast, which is now a regular feature of the Association's meeting, was held this year in the central hall of the Municipal Technical Association under the joint auspices of the National and Irish Temperance Leagues. The Lord Mayor of Belfast as the chairman of the latter body was the fitting president at the breakfast on July 29th, a gathering which attracted a surprising number of people, seeing that it was held at 8 o'clock in the morning. The chairman was supported by Sir James Anderson, Professor Crothers (Hartford, Connecticut) Dr. T. N. Kelynack, Mr. W. McAdam Eccles, Dr. Norman Porritt, and Mr. J. T. Rae. After the Lord Mayor's address on the progress of the temperance movement in Ireland—"he remembered the time in Belfast when it was hardly respectable to be a teetotaller"—Dr. Kelynack gave an interesting *résumé* of the principal facts relating to the scientific study of alcoholism as revealed at the recent London congress on the subject. He showed that systematic research into the question has only just been entered upon, and that paths of inquiry are opening out in many directions, but that the great attention directed to the movement by such public gatherings under scientific auspices as he was then addressing would result in a "real advancement in our perception of the causes and conditions of alcoholism, which shall finally enable us to arrest a malady threatening the very existence of the nation." Dr. Kelynack's able and temperate address was listened to with much interest by the large company.

The annual luncheon of the Continental Anglo-American Medical Society was held at the Grand Central Hotel, Belfast, on July 29th, Professor W. Osler occupying the chair. Over 40 members and guests were present. These included Professor Bryson Delavan and Dr. Emil Mayer (New York), Professor Fehling (Strasburg), Professor Calmette (Lille), Professor Jacobs, Dr. Bordet, Dr. Delsaux, and Dr. Toubeau (Brussels), Dr. L. Wickham (Paris), Sir Lauder Brunton, Bart., Sir Malcolm Morris, Sir James Barr, Mr. George Chiene, Mr. E. Treacher Collins, Mr. P. J. Freyer, Mr. Richard Lake, Dr. Arnold Lawson, Dr. Louis C. Parkes, Dr. Edwin Rayner, Mr. E. Hastings Tweedy, and Dr. Dawson Williams. The society was represented by Professor Osler and Professor StClair Thomson (Honorary Presidents), and by Dr. G. S. Brock (Rome), Dr. A. R. Coldstream (Florence), Dr. L. N. Robinson (Paris), Dr. D. W. Samways (Mentone), Mr. P. J. Thomson (Brussels), and Dr. C. G. Jarvis (Paris), honorary secretary. Professor Osler proposed the toast of "Prosperity to the Society," referring in humorous terms to the plight of the British or American traveller in the hands of a foreign medical man unable to understand the English language. He pointed out the value of the society not only in uniting the British and American practitioners in Europe and Northern Africa, but also in bringing to the notice of physicians at home the names of trustworthy doctors of their own nationality to whom they could entrust their patients travelling abroad Dr. Brock replied for the society and proposed the health of the guests, coupled with the names of Professor Calmette and Professor Delavan and Dr. J. Walton Browne, who made suitable replies. This very successful meeting was brought to a conclusion by the toast to the chairman, proposed by Dr. Samways and received with acclamation.

But if the presence of the King's representative lent an exceptional interest to some of the scientific work of the Congress, it goes without saying that its social side gained a great deal from the same cause. Perhaps its climax was reached in the City Hall on Thursday, July 29th, when the Lord Mayor, Sir Robert Anderson, and the Lady Mayoress gave a civic reception to the members of the Congress, which the Viceregal party attended officially. The scene in the great hall was brilliant in every sense of the word, for academic costume was in evidence to a greater extent than is usual, and included gowns and hoods of a symbolical colour range defying the interpretation of any but a professed robe-maker. The fine suite of reception-rooms and corridors extending round the four sides of the beautiful building, together with the upper and lower vestibules, were all well peopled before the close of the entertainment by a company which must have numbered nearly 2000 and which did not disperse till after midnight, when its more energetic members were winding up the evening with an impromptu dance in the great hall.

Another pleasant entertainment was given on the following evening by the President and members of the Ulster Branch of the Association in the Botanic Gardens belonging to the city and adjoining the University. An array of marquees had been provided against the weather, but the rain mercifully held off until the party was breaking up, when it made up for its abstinence with a relentless downpour. The gardens had been illuminated with excellent effect, and the tropical palmarium, which contains some perfectly grown tree-ferns, banana trees, and palm trees, and a fine specimen of the Victoria Regia lily, attracted many visitors to promenade its galleries or linger in its grottoes. Good entertainment, too, was provided in special pavilions, and in the opinion of many this function, which brought the meeting to its official close, was the most attractive of the week's festivities.

Much other private hospitality was enjoyed by members and visitors during the week. Sir William and Lady Whitla gave a garden party in their beautiful grounds, and Mr. and Mrs. M'Mordie a like entertainment The Royal North of Ireland Yacht Club not only entertained a party at Cultra, but furnished such of them as wished to try their seamanship with boats of the No. 2 class for a race, in which Dr. J. T. Wigham (Dublin) won the first prize and Dr. W. H. Brailey (Hove) the second. Mr. James Davidson, chairman of the Royal Victoria Hospital, held a crowded reception at that model institution on the Thursday afternoon, and earlier in the week the medical staff of the Mater Infirmorum Hospital welcomed the Association in a similar manner. At the Victoria Hospital a large number of interested visitors were admitted "behind the scenes" of the Plenum system of ventilation, and were blown down the huge ventilating shaft in the stiff breeze sent along it by the electric fans. The model laundry also came in for a good share of attention.

The great industrial houses of the city were not behindhand in hospitality, and many of them threw their works open to the inspection of visitors. Perhaps the vast shipbuilding yards of Messrs. Harland and Wolff attracted the largest crowd, which was permitted to wander where it would and gain a first-hand appreciation of the amount of patient labour that is driven with the rivets into a modern steel-built vessel. Messrs. Workman and Clark also entertained a party at their works. Messrs Dunville and Co gave a luncheon at their warehouse, afterwards showing their guests over their famous whisky distillery, whilst Messrs. Gallaher's tobacco factory, the large Belfast ropeworks, and the York Street Flax Spinning and Weaving Company all offered to interested visitors opportunity to watch the various phases of their respective industries in full working activity. Not the least attractive part of these annual congresses is the welcome which such prominent manufacturing firms are accustomed to offer to their city's medical visitors, who seldom elsewhere get the chance of taking such impressive object-lessons in the progress of modern industrial enterprise. And lastly, the various railway companies serving Belfast gave the Association special facilities for reaching the Giant's Causeway, the Mourne Mountains, and the Antrim coast on the Saturday following the close of the Congress, a day blessed with unexpected sunshine. The party that chose the Mourne district was entertained by the hospitable Warrenpoint urban council, which showed them the beauties of Carlingford Lough and of Rostrevor.

The golf-match on the links of the Royal County Down Golf Club at Newcastle for the handsome Belfast cup presented to the Association by the Ulster Medical Society for [illegible] the members of the British Medical [illegible] on July 30th, and attracted over 200 [illegible] The arrangements for this popular event were in the hands of Dr. T. S. Kirk, on whose organising powers the smoothness with which the competition was carried through reflects the greatest credit. Several special trains left Belfast for Newcastle and all the players and their friends were entertained to luncheon in the club house by *Dr. and Mrs. Kirk. The links were in excellent order* and the officials of the Royal County Down Golf Club were untiring in their efforts to secure the comfort of their many visitors. General admiration was expressed at the beautiful and sporting course which lies at the foot of Slieve Donard, the highest peak of the Mourne Mountains which sweep down to the sea in easy, graceful lines. The competition was favoured with brilliant sunshine. The smooth lawns round the club house were occupied by a bright group of ladies engaged in a putting competition and close by Mr. R L. Bell and Mrs. Bell, with the assistance of many lady friends, dispensed tea to the company. Towards the end of the afternoon the winner of the Belfast Cup was proclaimed by Dr. Kirk to be Dr. R. A. Shackleton of Holywood and this gentleman received the cup from the hands of Mrs. Kirk. Dr. Shackleton's score was 2 up on bogey with a handicap of 14 A second prize was gained by Mr. G. L. Chiene of Edinburgh, who was 3 down to bogey. Before the company left for Belfast Dr. Shackleton, in a neat speech, voiced the thanks of all present for the splendid hospitality accorded to the visitors, and the enthusiastic rendering of "For They are Jolly Good *Fellows" was at least remarkable for its volume.*

In conjunction with the annual meeting of the Medical Library Association an exhibition of over 200 valuable and interesting medical MSS., books, photographs of libraries, &c., was held in the engineering drawing room, Queen's University, Belfast, from July 27th to 30th, under the curatorship of Dr I. W. Hall and Mr C. E. A Clayton, honorary secretaries of the association The exhibition was divided into seven sections Two MSS in Section 1 call for special attention, one English, of the fourteenth century, on Urine (Manchester Medical Society), and another on the same subject, about the same date, in Latin and Irish (Trinity College, Dublin). Section 2 contained 15 volumes printed before 1500, amongst them the first edition of "Celsi de Medicina Liber," 1478 (Dr. Lloyd Roberts); the works of Mesue, 1478 (Bristol Corporation); the Surgery of Guy de Chauliac, 1480 (Manchester Medical Society); and the "Anathomia" of Mundinus, 1493 (Dr. Lloyd Roberts). Amongst the books printed since 1500, Section 3, were two copies of Raynalde's "Birth of Mankind," 1528 and 1613 (Dr. Lloyd Roberts and the Bristol Medical Library); Faer's "Regiment of Lyfe," 1567, and Paynel's "Regimen Sanitatis Salerni," 1541 (both by Dr Lloyd Roberts); and a pamphlet on "Variolous Contagion," 1808, by Jenner (Professor J. A. Lindsay). An exceptionally fine collection of books by Irish authors or printed in Ireland formed Section 4, lent principally by Dr. T. P. C. Kirkpatrick of Dublin, and the Royal College of Physicians of Ireland. Professor W. Osler had lent two interesting collections of books relating to Michael Servetus, whose quatercentenary occurs this year, and Ulrich von Hutten, the scholar-knight who described the treatment of syphilis in his own person. The final section contained a series of books on consumption, commencing with Celsus, who recommended an open-air treatment and milk diet, and ending with the Countess of Aberdeen's "Ireland's Crusade against Tuberculosis." Valuable books were also lent by the Royal College of Surgeons of England, Stevens' Hospital, Dublin, Sir W. Whitla, Dr. W. L. Storey, Mr. R. M. Young, Ulster Medical Society, Dr. Marion B. Andrews, Mr. E. G. Clayton, Queen's University, Belfast, Linen Hall Library, Belfast Corporation, Dr. G. Parker (Bristol), Bristol Medical Library, Mr. Swanston (Belfast), and Mr. Sommerville (Sheffield). Messrs. Bell and Mayor had also most generously loaned a number of covered cases.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 28TH.

President, Professor JAMES ALEXANDER LINDSAY (Belfast).

In continuing the discussion on

Angina Pectoris,

of which we reported Sir T. CLIFFORD ALLBUTT'S opening remarks in our last issue,

Sir T. LAUDER BRUNTON (London) agreed that the aorta might be one of the sources of anginal pain, but did not think it was the only one. He also opposed the suggestion of Sir Clifford Allbutt to abolish the term pseudo-angina. it was convenient to differentiate two distinct classes—pseudo-angina, occurring in younger people and not relieved by vaso-dilator drugs; and true angina, of more serious nature, in older people, and relieved by vaso-dilator agencies. One of the great difficulties was our imperfect knowledge of the sensory or afferent nerves of the heart, and he pointed out the difficulties in the way of their experimental investigation. He said there were very few researches on the function of the cardiac plexus, and yet Sir Clifford Allbutt asserted that it was motor in function. Sir Lauder Brunton regarded the pain in angina pectoris as similar to that in the bladder when it was distended and had to contract against resistance. He also stated that stretching of the serous covering of the bladder or intestine did not give rise to pain. It was only when the muscular fibres began to contract that the pain was felt. He referred to some experiments of Professor Kronecker showing that some muscle fibres of the heart might pass into a condition of cramp. In regard to the pain of angina pectoris this might occur at the apex of the heart as well as at the manubrium sterni. He agreed that cases might recover or remain well for years, but thought there was a greater tendency to sudden death afterwards. He also discussed the treatment and referred to his own observations made in 1867 on the value of vaso-dilator drugs.

Professor W. OSLER (Oxford) referred to the greater frequency of angina pectoris in the United States of America. He separated three groups of cases, the first corresponding to that described by Sir Clifford Allbutt and associated with local aortitis or peri-aortitis, a second group with disease of the coronary artery, and a third and more exceptional class with neither disease of the coronary artery nor of the aorta. He therefore was of opinion that Sir Clifford Allbutt's view did not hold in all cases. He confessed his own affection for the old theory of Allan Burns of intermittent claudication, while admitting that it also did not hold in all cases.

Dr. W. K. HUNTER (Glasgow) recorded some observations on a case of angina pectoris with a record of the pulse and blood pressure. He was of opinion that the most successful treatment in these cases was to lower blood pressure.

Dr. W. GORDON (Exeter) brought forward two observations, first, that he had often found the pulse tension higher in the recumbent than in the erect or sitting posture, and he offered this as a suggestion to explain the attacks which occurred during sleep. The second point was that the evidence of cardiac dilatation was often more easily obtained in the erect than in the recumbent posture.

Dr. JOHN HADDON (Denholm, Hawick) referred to the effects and importance of diet in this condition.

Sir CLIFFORD ALLBUTT then briefly replied.

Dr. D. W. SAMWAYS (Mentone) read a paper on

Misconceptions Concerning the Riviera.

He deprecated the tendency among some members of the medical profession to follow fashion in recommending continental health resorts and complained that the Riviera, like many others, had been petted and dropped. He then discussed *seriatim* certain misconceptions in regard to the Riviera, the first being that it was usually supposed to possess a marine climate, but he insisted that the mountains behind it dominate the character of its climate, and claimed that statistics showed that its climate was that of the mountains. The air set from these mountains at night time towards the sea and the air in the day was simply a return of the mountain air landwards. The second misconception to which he referred was the supposed treacherous character as regards climate owing to the fact that some healthy persons contracted severe colds during their stay there. This was, he maintained, due to their neglect to adapt their clothing and their habits to the nature of the climate. The charge of inconstancy he denied entirely, stating that it was almost too constant for some invalids, for whom a change of climatic conditions was often advantageous. The third misconception was the supposition that invalids, and especially tuberculous patients, were unwelcome, and the fourth, that the so-called English Riviera afforded better conditions than the French, which he emphatically denied.

Dr. W. GORDON (Exeter) read a paper on

The Influence of Soil on Phthisis.

He urged the necessity in dealing with such problems of securing the approximate isolation of influences and proceeded to give a brief historical *résumé* of our knowledge of this subject, referring especially to the statement of Sir George Buchanan, affirming a definite relation between the death-rate from pulmonary tuberculosis and the dampness of the subsoil. He also mentioned his own observations on the effect of strong prevalent rainy winds in this connexion and was of opinion that this was a more important factor. He gave details of some statistics he had collected in regard to this matter from Exeter and its surrounding district and stated that the statements of Buchanan were neither proved nor disproved. He also gave tables showing the phthisis death-rates in the sheltered streets of Exeter and in some sheltered parishes classified according to the geological nature of the subsoil, and stated that it was difficult to get away from the conclusion that soil did influence the death-rate.

THURSDAY, JULY 29TH.

Dr. W. TYRRELL BROOKS (Oxford) opened a discussion on

The Medical Aspects of Athleticism.

He pointed out that boys found pleasure in the comparative detachment from work which games afforded at school. He also referred to their value educationally in developing the power of organisation, which was a great force in developing character. There had been a revulsion of feeling in recent times against relying upon the results of examination alone as a test of capacity, as instanced in the conditions of the Cecil Rhodes scholarships. He believed that athletics or physical training in some form were necessary in schools. He drew a contrast between the preparatory school boy at 14 and the robust type of undergraduate at 18 or 19 years of age, and believed that the most robust type of undergraduate came from those schools with the most strenuous athletic exercises. He had endeavoured to collect statistics of the mortality among school boys due to athletics during the past 20 years, and had addressed inquiries to a number of schools. He had received 13 replies, embracing records of 6500 boys, among whom there were five deaths, of which three were purely accidental. One was a boy killed from damage to the lesser bowel sustained through a charge in Rugby football, while two occurred in gymnasiums, one boy being choked by regurgitation of food from the stomach, another case died a year after fracture of the cervical vertebræ sustained through a fall. Two other cases occurred which would be dealt with by Dr. Clement Dukes. During the same period two deaths occurred at the University of Oxford, one during a game of hockey; the man, who was the subject of double aortic disease, had been warned of his danger in so doing; the other was a high jumper, who, after a heavy indigestible meal, ran a few paces preparatory to a jump and fell dead. Dr. Brooks had also collected the cases of sudden death occurring among apparently healthy boys apart from athletics during the same period and found four cases, one being a case of sudden heart failure due to going into the water, the stomach being full of cherries at the time. Three other cases were probably due to cerebral causes. He wished to insist on the importance of securing a post-mortem examination in all cases of sudden death during games. Passing on to conside the organs likely to be damaged by athletics, he first discussed the heart and maintained that it was difficult to establish the effects upon this organ The observations of Dr W Leslie Mackenzie upon the hearts of children had shown that the heart area might often appear abnormally large and that the rhythm was less constantly regular than in adults, facts which minimise the value of these signs It was also of importance to investigate the possibilities in older persons of excessive smoking, gluttony insufficient rest, and sexual excesses, and also to remember the effects of toxins produced during febrile attacks leading to damage during and after convalescence He agreed with the view of Sir Clifford Allbutt that the young and healthy heart was so resilient that it was impossible for any damage to be done to it by ordinary muscular exercise In regard to the lungs he advised that boys with asthma should be restrained from strenuous exercise He strongly supported the recommendations of the Association of Medical Officers of Schools that every boy on entering a school should undergo a thorough medical examination, that his fitness for physical exercise should be determined by his physique and constitutional ability and not by his age, that there should be careful observation of the younger boys during their games, that an ample interval should be allowed between the previous meal and the beginning of exercise, and that special caution should be exercised in permitting resumption of games after convalescence from illness Referring then to the two forms of exercise which had been subjected to the most severe criticism—viz, boat racing and school and cross country runs—he urged the necessity of dealing with such matters on statistical lines, and referred to the observations of Dr John Morgan in regard to the former and those of Dr Armstrong in regard to the latter He believed that if such rules as had been mentioned were adhered to and if boys the subject of asthma or valvular disease of the heart, and those subject to dyspnœa on moderate exercise were excused from runs the risk of injury from athletics was exceedingly small In conclusion he put to the meeting the question whether we do not often put the interests of the individual before the interests of the race, and urged the necessity of maintaining the sturdy character of the British race

Dr CLEMENT DUKES (Rugby) began by submitting that there were two points to realise—first, that terrible catastrophes did sometimes happen from unwise athletics, and secondly, that these were entirely preventable He insisted that injurious results could be obtained from severe rapid or prolonged exertion He referred to his own experience of the results of intemperance in exercise and claimed that for 27 years he had witnessed the powerful effects of injudicious running, but that since the remedies he proposed had been applied all injurious consequences had disappeared He contrasted the short, quick run which was liable to cause immediate damage to the heart which as rapidly disappeared with the long run from which permanent damage was likely to occur For full grown persons the short quick run was more severe and harmful in its effects He believed that running permitted of over exertion more in boys than any other form of exertion and confessed himself an unsparing opponent of unwise and unreasonable running He regarded it as most reprehensible for school authorities to allow active exertion immediately after meals and without an interval of an hour Other factors to remember were poor physique and distance and pace of running beyond the capacity of the boy He described three stages of the effects of too severe running first, an inability to continue breathing with comfort leading to quick shallow gasps, bright specks appeared before the eyes and the eye balls throbbed there were loss of power in the legs and inability to run straight In the second stage the boy ran mechanically and was completely dazed In the third, he staggered and fell, became insensible, and might die He had seen the heart enormously dilated during running and death had followed in three weeks In another case a boy died on the road during a run apparently from blood poisoning due to some toxin produced in the muscles He strongly emphasised the necessity for adaptation of the exercise to the age size and physique of the boys and for its effective control He also gave an account of the Rugby School runs and the precautions taken to avoid over exertion

Sir T CLIFFORD ALLBUTT confessed himself to be a disciple of Dr Clement Dukes in this matter He said that in regard to young men there was no single instance of permanent harm resulting from exercise unless during the previous months there had been some infectious disease, including under this heading a bad cold and true influenza

Sir T LAUDER BRUNTON had seen severe damage to the heart result and had taken a grave view of the effects of over exercise In company with several other people he had signed a letter to the *Times* newspaper, which had been much criticised, but which he did not regret, as he thought it had been a factor in bringing forward this discussion He believed that physical training was a good thing for mankind, good for mind and morals as well as for physique and he thought it should begin in the preparatory schools He compared the continental method, which was largely the practice of *gymnastic exercises*, with the English which was chiefly made up of games and he believed that the ideal for youths was a combination of the two He strongly approved a suggestion which had been made by Colonel Fox that there should be a games master at schools whose function it should be to supervise the games

Dr ANTHONY TRAILL, Provost of Trinity College (Dublin), gave his personal experience as an athlete with a remarkable record of active exercise up to a considerable age He also gave an account of his work as a Commissioner of Education in Ireland, and pointed out the importance in the primary schools of seeing that the children were properly fed He further pointed out the educational value of athletic exercises and their value morally as a physical deterrent from vice

Sir JAMES BARR (Liverpool) deprecated any suggestion of abolishing the factor of contest from games and believed that the more hazardous the game the better for the character of the individual

Dr [illegible] to boy [illegible] as we [illegible] examined 72 boy scouts and found that in 35 the heart was normal while in 37 there was some evidence of dilatation, 10 of them showing a considerable degree, with the impulse from ¾ to 1 inch outside the nipple

Dr A GORDON GULLAN (Liverpool) mentioned some cases under his own observation of damage to the heart after physical exercise He believed that physical exercise was good provided the man was trained up to the work he had to perform

Dr W J TYSON (Folkestone) pointed out the necessity of physical exercise in children before the school age and in men after the age of 30

Professor W OSLER and Dr W P KENNEDY (Bath) also spoke, and Dr BROOKS and Dr DUKES briefly replied

During the discussion the section adopted a resolution, moved by Sir LAUDER BRUN[illegible] SHAW (London), suggesting [illegible] British Medical Association [illegible] pronouncement as to the most suitable manner in which athleticism in schools may be so organised and controlled as to achieve the maximum of benefit and to reduce to a minimum any risk of harm to the individual schoolboy

At the close of this interesting discussion

Dr ALEXANDER DEMPSEY (Belfast) showed an unusual case of Argyria

Professor B MOORE (Liverpool) demonstrated a new method of administering oxygen, which had the advantage of economy and also secured that the patient breathed much more of the gas than by the ordinary methods

Dr CLIVE RIVIERE read a paper on

A Natural Experiment in Cardiac Strain

His observations were made upon 40 boys taken for a school excursion to a hilly district Of these 33 were healthy boys, but 20 of them were afterwards found to show enlargement of the heart of various grades which remained for weeks or months For comparison Dr Riviere examined the hearts of 181 average schoolboys between the ages of 10 and 14, and he showed diagrams indicating the results obtained He advised in regard to such excursions and to exercises in general that they should be mapped out with a view to the weakest members of the party that abundant sleep should be allowed, and that there should be short tramps with frequent rests between

Dr. FRANK C. EVE (Hull) read a paper on

A Case in which Pneumaturia was Apparently the Sole Indication of Glycosuria,

of which the following is an abstract. The patient was a man of 45 years who for four years had suffered from right ascending pyelitis due to the colon bacillus, with pus and often free gas in the urine and pain in the loins. No sugar was found in the urine. This sometimes kept him in bed for weeks at a time. He was given vaccine treatment (60–300 millions of colon bacilli every 10–14 days); this appeared to do good, but complete success was not attained until alkalies and an anti-glycosuric diet were adopted. This was advised on the supposition that there was in reality sugar in the urine which had been entirely converted into acid and gas by the bacillus coli. This assumption was verified (1) by the success of the anti-glycosuric diet, (2) by finding from his previous medical adviser that prior to the cystitis (seven years ago) he often had glycosuria. The patient now expressed himself as "quite fit," though there were still a few bacilli in the urine. There had been no albumin in the urine, from which (according to Adrian and Hann) the B. coli might manufacture gas. The patient's strain of B. coli could not be induced to produce gas in urine or liquid culture media, but would do so freely in gelatine media—a hint for which the speaker expressed his indebtedness to Dr. A. C. Houston. It was found that a standard bacillus coli [illegible] y from non-albuminous diabetic [illegible] 's organism approximated to the typhoid type in its feeble power of gas production. The patient so often complained of the smarting of acid urine that probably his sugar was often split up into acetic and lactic acids and alcohol without gas production. These irritating products would perpetuate the pyelitis and the sugar would nourish the germs it was desired to exterminate.

SURGERY.

WEDNESDAY, JULY 28TH.

President, Professor T. SINCLAIR (Belfast).

At the close of the discussion reported in our last issue Mr. G. P. NEWBOLT (Liverpool) read a paper on

Some Cases of Resection of Intestine.

In the case of the small intestine, he held that it was much better to resect than to return doubtful bowel in strangulated hernia; he had never regretted resecting bowel, but he had regretted returning bowel as to the vitality of which he had had some doubt. In the first five of his cases he had employed the Murphy button and he had found it of much service, and he still carried it in his operating bag, though he had not used it for some years. In all these resection operations it was essential to have plenty of room, and this could be obtained by extending upwards the incision. When the excision was not done for strangulated bowel he considered that a median incision was to be preferred, as the surgeon could not be certain in what part of the abdomen resection was needed. In resecting for malignant growths the ideal plan was to resect the bowel and to unite the ends at the same operation. For the small intestine he thought that end-to end union was the most satisfactory method, but for the large bowel lateral anastomosis was preferable. The paper was accompanied by a table giving particulars of 24 cases in which Mr. Newbolt had resected portions of intestine; in 11 of these the small bowel was affected and in 13 the large bowel.

Sir THOMAS MYLES (Dublin) expressed the opinion that immediate union of the bowel after resection for gangrenous hernia did not give the best results and this was especially the case in femoral hernia, where free enlargement of the wound was very difficult. He preferred to perform the operation in two stages, in the first he merely relieved the obstruction, laying open the bowel into the wound, and later he resected and joined the ends of the bowel. He was in favour of lateral anastomosis.

Mr. W. MCADAM ECCLES (London) pointed out that in a case of gangrenous femoral hernia the wound could not be sufficiently enlarged, and he was in favour of a separate incision. Which form of anastomosis was to be preferred depended on the individual case—for instance, if the proximal portion of gut was dilated and the distal portion was much contracted, end-to-end union would be very difficult, and in such a case lateral anastomosis would be preferable. He considered drainage of the neighbourhood of the union a valuable precaution.

Mr. G. A. SYME (Melbourne) stated that, when on opening a hernial sac he found the bowel to be gangrenous, he preferred to make a separate opening, by which he performed resection of the gangrenous portion and reunited the bowel, and then he returned to the hernial incision and completed the operation. He considered lateral anastomosis to be the best method of union.

Mr. A. B. MITCHELL (Belfast) was opposed to the temporary formation of an artificial anus. When operating for a tumour of the bowel and the patient was not in a condition to stand the complete operation he preferred to perform a lateral anastomosis and to drop the tumour back into the abdomen, and later he removed the growth. He considered lateral anastomosis better than end-to-end union.

Mr. C. P. CHILDE (Southsea) always completed the operation of resection of gangrenous bowel in one sitting. He had had seven cases, and of these six recovered and one died. He also did the resection in the hernial wound, using lateral anastomosis. The largest amount of bowel he had ever resected was 8 feet 9 inches in a case of gangrenous femoral hernia; the patient recovered from the operation and for a time did well, but she died from wasting six months after the operation.

Mr. W. THELWALL THOMAS (Liverpool) pointed out that in cases of chronic intestinal obstruction the patient was often not in a condition to stand a long operation; he preferred, therefore, to relieve the obstruction, and later he restored the continuity of the bowel, always employing lateral anastomosis.

Mr. NEWBOLT replied.

THURSDAY, JULY 29TH.

Demonstration of Cases.

Mr. A. B. MITCHELL showed two cases in which he had employed silk drainage for lymphatic obstruction. The first case was that of a man, 25 years old, who had had a chronic œdema of the lids of both eyes so that he was not able to separate the lids more than an eighth of an inch. Two silk threads were inserted and carried down under the skin of the face. The operation had been done a month before the demonstration and the œdema was greatly lessened so that the eyes could be opened more widely. In the second case œdema of the left cheek had followed extirpation of lymphatic glands of the left side of the neck. In this case also much improvement had followed the insertion of silk threads leading from the face to the neck. As Mr. Mitchell pointed out, gravity assisted the action of these artificial lymph tracts.

Mr. HOWARD STEVENSON (Belfast) showed a boy, four years old, who had numerous large subcutaneous lipomata of the abdomen and buttock; he had also great enlargement of some of the toes of each foot, apparently due to lymphatic obstruction. The conditions were hardly noticeable at birth, being seen for the first time when he was about three months old.

Mr. MITCHELL also showed a youth, 20 years of age, who had had extensive ankylosis after an attack of rheumatic fever. He had been unable to walk, as both feet had been in the position of equinus. Mr. Mitchell excised the astragalus on both sides, and the patient was able to put the foot flat on the ground and to walk with the aid of crutches. Excision of both elbows had given him very useful arms

Sir WILLIAM MACEWEN (Glasgow) opened a discussion on

Modern Methods in the Treatment of Tuberculous Disease of Joints.

He commenced by saying that the surgeon would have very great difficulty in deciding on the best treatment of a case if the particular variety of tuberculous joint present had not been settled. The stage also of the disease must be borne in mind, for the treatment fit for one stage might not be equally suitable for another. If the tubercles in the joint were grey and discrete and the vascular supply was good, it was possible to influence these tubercles through the blood stream, but when the tuberculous tissue had undergone caseation and the vascular supply of the part was diminished this form of treatment was no longer applicable. When it was possible it might act either by throwing out a barrier which prevented the further progress of the disease, or by might produce absorption. When the tuberculosis had spread from the bone under the articular cartilage, so as to throw it off, the joint must become stiff if it was to heal; the question then arose, Was it better to treat this by fixation or to open and remove as much of the tuberculous tissue as possible? In the earlier stages was it wise to let the joint become stiff with the risk of liquefaction of the tuberculous deposit? In deciding this question it must be borne in mind that many other tissues suffered in addition to the joints—for instance, the muscles; there was in many cases an ascending trophic neurosis. If the joint was one, such as the knee, where ankylosis after excision was certain to occur, it might be left much longer without operation than a joint where excision might be followed by movement, as in the elbow. The surgeon must determine whether the bone or the synovial membrane was affected or both. The patient was not often brought to the surgeon at a very early stage when the bone only was affected, but if seen in this stage operation was advisable. If the disease in the bone could not be reached without passing through the synovial membrane, the operation should be done in two stages; at the first the synovial membrane was opened and the cavity of the joint was shut off by sutures, and at the second operation the disease in the bone was removed. Then iodoform and glycerine emulsion was introduced and care should be taken to leave some of the emulsion along the margins of the incision so as to prevent infection. Iodoform was most effective before caseation had occurred. Subnitrate of bismuth with vaseline was useful, but iodoform was better. Bier's congestive method was of value at an early stage, but not unaided. When the synovial membrane was thickened the parenchymatous injection of iodoform emulsion was useful. To obtain the best results with iodoform the crystals should be large and then toxic effects were hardly ever seen. A very useful preparation was made with one part of iodoform and four of boric acid; the boric acid served to dilute the iodoform. In the later stages, when the articular cartilage had been thrown off and large masses of tuberculous granulation tissue were present, the question of excision must be considered, even in children. Excision should not be done in the typical manner described in books; for instance, in the case of the hip the neck of the bone *should never be removed, but the whole operation should be* intracapsular. The surgeon should not wait until sinuses formed before he excised. The time for excision had come when the cartilage had been destroyed. As in the case of children we wished to preserve the growth of the bone, the excision should never reach to the epiphyseal line. It must not be forgotten that the removal of tuberculous foci often greatly improved the general health.

Mr. ROBERT JONES (Liverpool) also read a paper introductory to the discussion. He claimed that tuberculosis ran a different course in the child and in the adult. In the child the disease was almost benign and tended towards recovery; in the adult it was much more serious, and excision was often needed. In children excision if done early often led to useless limbs. The early diagnosis of tuberculosis in the child was often important. The action to the new tuberculin was trustworthy; an injection of from three to five milligrammes between the shoulders was sufficient. X rays were of little use in very early cases. *The most valuable early sign was rigidity, preventing move*ment of the joint in all directions. It might be laid down that if there were no rigidity there was no arthritis, no anæsthetic being employed during the examination. Limitation of movement in one direction was not of much value; the rigidity must be towards movement in all directions. Pain was neither a constant nor a valuable sign. It was often difficult to determine when treatment might be discarded; the best indication was when the range of movement was not influenced by use, or when, if ankylosis was present, the position of the limb did not vary. The most important factor in the healing of tuberculous joints was open air; day and night, if possible, the child should be out of doors. Any splints employed should b[illegible] the simplest type. If the tuberculosis affects the [illegible] the patient should lie on a convex couch. The [illegible] should be over-extended in tuberculosis. The ankle should be fixed so that the heel should be the first part to touch the grou[illegible]loped they should be [illegible] symptoms, for many [illegible]bscess approached the surface the contents might be drawn off through a very small incision Should an abscess become septic, with a rise of temperature, it should be opened early. For paralysis from spinal caries no operation was needed, as recovery occurred spontaneously in 97 per cent. Mr. Jones was in favour of reducing deformity of the spine due to caries at whatever stage it might be seen. In osteotomy of the femur he was in favour of *doing it in two stages*, dividing two-thirds of the bone at the first operation, and two weeks later fracturing the bone when the skin wound had healed. In cases of angular ankylosis in the adult it was possible to estimate the prognosis thus. Supposing the angle is 15°, the splint was made of an angle of 20°; then if more move[illegible] but if the [illegible] that dise[illegible] governed by opsonic estimations, were sometimes of value. Bier's congestive method was sometimes useful, but occasionally the results had been disastrous.

Professor SONNENBURG (Berlin) commenced by saying that within recent years operations had been less frequently performed for caries than before He had tried Marmorek's serum and the results were sometimes good. He had employed the new tuberculin of Koch in 20 cases with much benefit. It might be employed for the local skin test. For treatment at first only very weak solutions were employed for injection. One milligramme of the tuberculin was injected, and if no reaction the dose was increased up to 8 or 10 milligrammes or until a reaction occurred. The temperature in a satisfactory reaction might not exceed 38° C., but it might rise to over 40° C. If a reaction occurred an interval of some days was left and then the injections were recommenced, beginning with a smaller dose than that which had caused the reaction. After every reaction the skin test was employed before treatment was recommenced. The injections were best given on the chest or back; they usually caused some pain. A cupping glass might be used for 20 minutes immediately after an injection. Should a rigor occur after an injection it might probably mean that there had been an injection into a vein Tests for antibodies should be made from time to time. The treatment must be continued for months or years.

A paper on the subject by Mr. A. H. TUBBY *(London)* was read by Mr. W. THELWALL THOMAS (Liverpool). The tuberculous focus might in some cases be extra-articular, and the question whether the joint would be implicated depended greatly on the relation of the epiphyseal line to the joint, and so some joints were much more early infected than others. A para-articular abscess generally formed on one side of a joint; it caused pain especially after exertion, and a special tender spot could be found; thickening followed, and later still the joint might be affected. The treatment would be rest at first, but the abscess should be opened early.

Dr. J. CRAWFORD RENTON (Glasgow) considered that the diagnosis in early cases had been helped by X rays and by Calmette's tuberculin test Bier's method was useful, and the injection of tuberculin every 14 days was also of value. Good food and open-air treatment were of great importance. Extension was useful, and a coxa vara splint causing abduction was very good for cases of hip disease. He believed that many early cases did not need operative treatment. In the advanced stage in young people extension and fixation in plaster-of-Plaster were of great value, but excision might be needed when other means failed. After excision the limb should be placed in an apparatus for 18 months to prevent deformity Operation should not be delayed in the case of the elbow-joint, and care should be devoted to the after-treatment. In adults operation was more often needed, and after excision of the knee the femur and tibia should be pegged together In cases of deformity of the knee-joint with quiescent caries he advised operation, and later the use of an O'Connor's extension boot gave an excellent functional result.

[illegible] had often found the [illegible]

He practised partial excision only in well limited cases.

Mr. S. MAYNARD SMITH (London) described a series of 34 cases in which tuberculosis of bones or joints had been treated by vaccines, and of five treated only by inoculation four were cured; of 12 treated by operation before inoculation

11 were well, and in seven of these there was complete restoration of function. He also described a method by which auto-inoculation was employed for diagnosis and also for deciding when the disease was cured. By means of massage, or by walking, or by Bier's bandage, some of the toxins were forced into the circulation, and gave rise to a reaction. He considered the method to be of great value.

Mr. W. RUSHTON PARKER (Liverpool) spoke strongly in favour of the Thomas's hip-splint in the treatment of tuberculous hip. He looked upon it as the most successful method of dealing with this condition.

Mr. C. W. CATHCART (Edinburgh) claimed that it must be acknowledged that tuberculosis was a curable disease. He had employed Bier's congestion method for some years with great success. Iodoform and glycerine emulsion were of value; and for treating tuberculous abscess he preferred to inject them with the emulsion after drawing off some of the contents. The practical difficulties in estimating the opsonic index interfered greatly with the use of tuberculin.

Sir WILLIAM MACEWEN, in reply, said that in the great bulk of children tuberculosis of a joint began in the epiphyses and not in the synovial membrane; and it must be possible to evacuate this disease before it invaded the joint. Rigidity was of value as a test for tuberculosis of a joint, but the disease was sometimes present without any rigidity. The functional results after excision depended greatly on the manner in which the excision was done; for instance, in the case of the shoulder it was important not to turn the long tendon of the biceps out of its groove. An important factor in the treatment was fresh air. God had given us fresh air, but as soon as lofty hygienic rooms were built they were taxed more heavily than small, low, unhygienic rooms.

OPHTHALMOLOGY.

WEDNESDAY, JULY 28TH.

President Dr. JOHN WALTON BROWNE (Belfast).

The PRESIDENT extended a hearty welcome to all those who graced the busy and enterprising city of Belfast with their presence, and after warmly welcoming the section and thanking his colleagues for his election expressed the deep regret that they all felt for the loss which the Association, and their section in particular, had sustained in the death of Mr. Simeon Snell. But his work lived with them, for no one had done more than he to put the subjects of nystagmus, especially that affecting miners, and the injuries caused to the eye by foreign bodies on really scientific bases. As regards their own work at Belfast, he had only to mention the work of McKeown to remind them that new and important methods of treatment had been initiated with them. McKeown first used the method of washing out remnants of cataract; and he was the first in the United Kingdom, perhaps in the world, to insert a magnet into the human eye to extract steel fragments. Lastly, McKeown was the first to insist on the necessity for a special examination in ophthalmology before candidates should be eligible for graduation in medicine. At the present time there was some conflict of opinion as to the relation of eye specialism to other special departments, the ear, nose and throat. He would remind them that eye and ear had in the past been commonly associated in practice; the founder of Moorfields Eye Hospital had practised in these two branches. It was the custom in most parts of Ireland for the four departments to be worked together. Whatever might be the ultimate trend of practice he felt sure that no man could be really competent as an eye surgeon who could not for himself examine a nose and be sure that complications of the lacrymal sac did not have their origin in the nasal chambers.

Dr. A. FREELAND FERGUS (Glasgow) opened a discussion on

Eye Injuries in their Relation to the Workmen's Compensation Act.

He said that the opener for this discussion had been selected in the person of Mr. Simeon Snell, and it was a matter of deep regret that his wide personal knowledge of this subject was no longer their valued possession. He felt that the problem of compensation for eye injuries was an all but insoluble one, at any rate in our present state of knowledge. The statistics at present available for examination were insufficient for any safe conclusions to be based thereon. Attempts had been made to derive mathematical formulæ expressive of what might be called visual efficiency. The works of Berry of Edinburgh and of Percival of Newcastle-on-Tyne were invaluable, and none could doubt that these two men were the highest of authorities in the department of mathematics as applied to the practice of ophthalmology. But with their full knowledge of these matters both had been careful to state that no formula could be absolute; at best it could only express an approximation or perhaps indicate the directions in which a solution was to be obtained. So great an authority as Professor Peter Guthrie Tate was reported to have said that it was quite impossible to formulate anything which involved human volition. He might go a step further and say it was impossible to reduce to mathematical formulæ anything involving human action based on individual human volition and intelligence. For example, he had known a blind man who could scarcely find his way to the house next door and yet another who could play an excellent hand at whist. On the performance of which of these two men were they to found a rigid basis for formulation? In every case there was, besides the determination of visual acuity, the more important determination of intelligence, and since that varied with every man, so their estimation of the seriousness of any given injury was almost individualistic. From his experience he would conclude that all forms of work might be roughly divided into two groups. 1. That in which visual acuteness was of primary importance. To this class belonged such occupations as those of watchmakers, authors, lawyers, doctors, and many others. For most of these good binocular vision was an absolute necessity. 2. In the other class visual acuteness in the strict sense of the term played a secondary part. Efficiency in the work depended more on the light sense and in the sense of alignment. To this group belonged most manual and labouring work. And in these cases it became a point for consideration whether a man in such employment must have binocular vision. Dr. Fergus proceeded to cite trades in which men with single-eyed vision successfully performed their tasks, and argued therefrom that binocular vision was not necessary provided that they possessed a good light sense and a good sense of alignment. It therefore would seem that any attempt to express visual efficiency in terms of visual acuteness alone would lead to serious error. He then proceeded to expound an experiment which went to prove that a man could possess a sense of location sufficient for such an employment as riveter provided he retained these two factors of vision, light and alignment. The power of appreciating distance by convergence was lost, but there remained the subtle factor of the accommodation. There were, however, other points to be considered. 1. The new condition might necessitate the man changing his work. 2. The loss of an eye might effect his chance of getting other work. There was no doubt that the work of a one-eyed man was limited, and if this limitation affected a man then compensation should be liberal. A man could not profitably change his mode of life at adult age. It was no use to cry "back to the land" to the adult slum dwellers, the work of migration must be begun with the children. So it was with every form of work, the new hand was less efficient than the practised hand. It was therefore the more important that they should ascertain those branches of labour in which a one-eyed man could work, so that those of these trades, and those of other trades, could be readily distinguished in the matter of compensation. Secondly, they had to make up their minds on the point of the justice or otherwise of extending compensation to the prospective disabilities of an injured man. Many judges had held that this was too remote. They seemed to think that if a man recovered from his injury, and it were proven that he was able to work, there the matter ended, and that he was not entitled to compensation for future contingencies which were only problematical. Yet it could not be denied that at the present time a man so situated had less chance of getting work than a normal man. He was held by insurance companies to be more liable to risk of injury. He felt that for such cases as these there was no help but the institution of a "contracting-out" clause. The Act as it stood was good in intention, but these good intentions were tending to work out as a serious handicap to those who were not of strictly normal physique, and destitution was being fostered by the very Act that was devised to prevent it. It ought not to pass the wit of man to frame such an amendment to the provision of the Act that would not open the door to abuses.

Lastly, he wished to draw attention to the view held by workmen on the intentions of the Act. They had the idea that it was an insurance scheme, and when injured they at once thought of what they would get out of the injury. It was not so; the Act was intended to prevent loss by injury, and this proper idea was being lost to view by those most affected.

Dr. CECIL E. SHAW (Belfast) in dealing specially with the unsatisfactory working of the Workmen's Compensation Act with regard to compensation for the loss of an eye said, according to the Act, no compensation was given for such loss but only for partial or total incapacity for work. Where one eye was lost and the other was healthy a man soon learned to work with one eye and in the great majority of cases work could be done quite as well as before. He knew of four men in Belfast who were daily driving motor cars, in spite of having lost an eye, and one of them, a professional chauffeur, told him that six months after the accident by which his eye was lost he had forgotten all about it. According to the strict interpretation of the Act, such cases should only obtain compensation for the few months that elapsed before they were fit to work again But the true injury in loss of an eye was not generally any loss of capacity for work [illegible] of total blindness owing [illegible] eye. Everyone was liable [illegible] the one-eyed man it was a much more serious event than to the man who had another eye to depend upon. Owing to this many employers avoided one-eyed men, since a slight accident to one eye might totally incapacitate them. Even though perfectly fit for work, they might fail to obtain it on this account. An interesting case occurred in his experience a short time ago of which the facts were briefly as follows. A working girl lost an eye by accident, and after some months' incapacity, for which she received compensation, she returned to her work, which she was able to do efficiently. But when slackness of work arose, and she had to seek work elsewhere, she could not get a job on account, as she believed, of her being one-eyed. She then brought an action for compensation, but it was pointed out that there was no ground to go upon since there was no incapacity, as proved by her having worked at full wages for some months after the loss of the eye. A better form of compensation for the loss of an eye would be a sum fixed according to the average wages, to be paid irrespective of all theories or statements about a workman's capacity for work. The endless litigation involved [illegible] cases benefited the great learned professions, no doubt [illegible] cost of the litigation came.

Dr. W. HERBERT BRAILEY (Brighton) said that one of the vicious tendencies of the working of the Act was to assign any disease affecting a workman to the direct influence of his occupation. No tendency could be more injurious. The only way of escape from this was the preliminary examination of workpeople to ascertain their fitness or otherwise for the particular work they intended to follow.

Mr. BISHOP HARMAN (London) said that he was surprised at the comparative indifference exhibited by the openers of the discussion to the loss sustained by a man on the one point of deprivation of binocular or stereoscopic vision. It seemed to him that in many of the tasks mentioned, even such a one as bricklaying, the sense of the position of things was immeasurably better with the two-eyed man than with the one-eyed man. He would ask them to try an afternoon's round of golf with one eye obscured, and see how they were "off" [illegible] was perhaps of the [illegible] there were men who [illegible] he had known men successfully working for years as engineers and fitters with a single eye, but they did not present the average, and one might ask how much better workmen might they not have become had they retained both eyes. Next there was the point of loss of nerve power—pluck. It was without doubt of great importance in the modern workshop filled with rapidly moving machinery. If a man lost skill in a game because of a serious accident in that kind of game, and of this he had reason to be sure, how much more in a machine-shop? Then there was no doubt that the one-eyed were seriously handicapped in getting work. He found that insurance policies for domestic servants excluded one-eyed persons from the current rates. Perhaps they would remember the evidence of a trial which showed the lengths of deception to which a girl was brought who was persuaded by a rogue that he could make a new eye grow for the one she had lost! Hope to retrieve her lost position led her captive in his snare. There could be little doubt that they were right in urging employers to examine their workpeople: it was good for both parties. Disputes about the former states of injured organs would be eliminated and work fitting to the capacities of the men would be apportioned. Lastly, he felt that the most pressing need was the removal of these cases from the grasp of the lawyer. The waste and bitterness following their operations were notorious. He would like to see the establishment of "Accident Courts." To the presiding judge of every such district court reports of any accident should be *compulsory at the time of the accident, together with the* facts of the condition as ascertained by the medical men representing man and master; these reports, together with their final reports, should form the material on which the judge should award compensation in any case where he deemed it was due. Advice he might call in, but argument would be excluded and the bane of litigation checked.

Dr. ARTHUR GREENE (Norwich) said that he was inclined to agree with Dr. Fergus in considering that the individual who has lost vision of one eye was not (except for a few special occupations) at any great disadvantage from an earning point of view, provided the remaining eye had good vision. Many people (including the speaker) had little or no sense of perspective, and the loss to such an individual of one eye was only the limitation of the field of vision. He felt that any satisfactory scheme of legislation must take particular cognisance of the likelihood of the injury to affect the freedom of the sufferer to obtain work. He cited the case of a nurse-girl on whom Mules's operation had been done with such success that she passed as a two-eyed girl, but when her mistress found out the true state of affairs she at once lost her situation, although no fault could be found with her work.

Dr. R. WALLACE HENRY (Leicester) said that there was a great need for the reduction of lawyers' costs. He strongly advocated bringing together the medical men of the two sides in cases of dispute. They could at least agree on the facts of the condition, in eye cases at any rate, and agreement on these points narrowed the issue to one of opinion as to future events. He strongly supported Dr. Shaw in his remarks on the difficulty which one-eyed people had in getting work.

Dr. S. JOHNSON TAYLOR (Norwich) asked if it was supposed that a man of 40 to 50 years could take up fresh work when injury prevented him from doing work that required binocular vision. He was strongly impressed with the view that even good bricklaying wanted two eyes. He cited the case of a friend who could at one time always beat him at the game of bowls, but who never beat him again when by reason of a retinal hæmorrhage he lost the use of one eye.

Professor EMILE FUCHS (Vienna) said that this was not a purely scientific question. It could not be denied that most one-eyed men were capable of work, but the difficulty lay in the conflict of the interests of employer and servant. An employer did not want a one-eyed man because of the added risk of injury. This had to be met by legislation. In Germany and Austria no personal responsibility lay with employers to provide compensation. There was a fund to which all employers and men subscribed by way of insurance; 90 per cent. was provided by the masters, 10 per cent. by the men. This public fund was administered by their own judges at the instance of their own medical men, and the sole idea was that of doing justice to the injured man.

Mr. G. A. BERRY (Edinburgh) said that the difficulty of estimating in the influence of injury upon pre-existing disease was such that medical examination of workpeople was urgent. He did not agree in the seriousness of the added risk of injury to one-eyed men. So far as compensation could take cognisance of any such problem, it should only extend to six months after the injury to allow for the strangeness of the conditions, but more might be done for young people whose whole career might be altered.

Dr. JOSEPH NELSON (Belfast) said that the facts of eye injuries were so precise that there could be no room for taking sides. He thought that medical men should combine against the practice in vogue of setting them one against the other in giving evidence.

about one in several hundred—showed Altmann's granules, distinguishable by their red colour from the brown granules of melanin. In the case of small round cell sarcoma, in which the cells otherwise resembled lymphocytes, there was a marked absence of granules as compared with lymphoid tissue. (5) Endothelioma.—Granules were small and few in number in one of this group of cases and absent in three. In the remaining instance, however, granules were numerous; this was a case of perithelioma in which islets of tissue, well-staining as regards both nuclei and granules, were embedded in a groundwork of necrotic tissue. Conclusion.—The investigation of the question under discussion was still incomplete. The group of sarcomata was very inadequately represented owing to lack of fresh operation material, and Dr. Beckton would be greatly obliged for any kind assistance in this respect. Granules, again, had been found in cells of new growths of doubtful or limited malignancy, and might prove to be of special interest in these cases. But as far as the present investigation has proceeded the conclusion might be drawn that "in malignant new growths granules tend to disappear, or to be absent altogether, from the particular type of cell involved"; and the cells of malignant neoplasms showed an important histological difference from cells of normal type; this difference might be regarded as an expression of deviation from, or loss of, normal function. Dr. Beckton concluded with a request for fresh sarcomatous material to be sent to him so that it reached him not later than 24 hours after removal from the body, either simply wrapped in oiled silk without the addition of preservative, or, if preservative were used, formol-Müller should be the one chosen.

In the discussion that followed Dr. W. S. LAZARUS-BARLOW (London) pointed out the importance of Dr. Beckton's observations, which for the first time placed upon a scientific basis the accurate differentiation between normal and cancer cells on the one hand, and between sarcomatous and purely inflammatory tissues on the other. The observations had a further value, in the speaker's opinion, in that the appearance of Altmann's granules in plasma cells and lymphocytes afforded a very delicate index of the comparative efficiency of various methods of fixation, for it seemed obvious that Dr. Beckton's observations pointed in no uncertain manner to essential chemical differences in the molecular constitution of cell granules, which when fully studied would, it was to be hoped, lead to a practical system of classification. Dr. Lazarus-Barlow further suggested that the granules of plasma cells and lymphocytes might possibly be zymogenic in function—in other words, that these cells were true secreting glands—in which case the whole question of internal secretion would command increased attention.

Dr. A. E. MOORE (Cork) contributed the observation that sections of myxoma fixed in 5 per cent. formalin, cut with a freezing microtome and stained with carbolic thionin blue, showed a large number of plasma cells filled with dark staining granules, whilst the other connective tissue cells showed no granules whatever.

Professor I. WALKER HALL (Bristol) pointed out the importance of determining the existence or absence of Altmann's granules in the cells of fœtal tissues in view of the possibility of their marking a stage in cell development.

After Dr. BECKTON had replied to some inquiries as to methods of technique from Professor J. LORRAIN SMITH (Manchester) and others, the section passed to the consideration of

Some Observations on the Pathology of Innocent Goitre,

a subject introduced by Dr. HELEN CHAMBERS (London), who illustrated it by an extensive and comprehensive series of lantern slides dealing with both the naked-eye and microscopical appearances of material obtained during a study of 261 cases of goitre treated at the Royal Free Hospital in the nine years from 1900–08. As Dr. Chambers's object had been to study the pathological changes in the thyroid gland in cases of innocent goitre, those cases only were considered which had been treated by operative removal, and of these 93 had been examined histologically. Excluding malignant disease and Graves's disease, three types of goitre were recognised—viz., parenchymatous, adenomatous, and adeno-parenchymatous. Parenchymatous goitre must be distinguished from the other forms for the following reasons: 1. The macroscopic changes in the gland were distinct. The whole gland was affected uniformly; there were no encapsuled masses and the tissue had no tendency to break down or form cysts of large size. 2. It was a condition occurring almost exclusively in young adults. 3. In comparison with other forms of goitre, cases of this type rarely needed surgical interference. In a total number of 261 cases 30 only were of this variety. 4. The marked tendency of goitre to affect women was much less evident in this form. During the years 1900–07, 21 cases were treated, 10 males and 11 females. The second and third types of goitre—viz., adenomatous and adeno-parenchymatous—were probably closely related, and were characterised by the development in the gland of encapsuled masses. In the adeno-parenchymatous form these were in large numbers, and were associated with increase of the gland tissue. In the adenomatous form the enlargement of the thyroid was due to the growth of one or more encapsuled tumours and the gland tissue was but little affected. The cases in each group were arranged in quinquennial age periods, and the relative age liability at each period was represented graphically. Before referring to the histological structure in the goitre cases, the results of the histological examination of thyroid glands from 60 consecutive post-mortem cases were considered. The changes in adults were comparatively slight; in children under two years the appearance of the gland was often much altered. The colloid disappeared, the vesicles became filled with cells, and the whole gland became a solid cellular organ. Half of the thyroid glands of children under two years were in this condition—i.e., in cases of tuberculosis, empyema, broncho-pneumonia, and acute nephritis. The other changes of importance were those which sometimes followed injury to the gland, as in tracheotomy. The vesicles had a similar appearance to those in Graves's disease. They were tubular, almost empty, had infolded walls, and were lined by high columnar epithelium. The histological structure of the goitre cases was considered in two sections: (1) the structure of the adenomata; and (2) the changes found in the gland tissue. 1. 70 adenomata had been examined; one-fourth of these had a structure closely similar to that of the thyroid in an early fœtal condition. The other cases were either similar in structure to the adult gland or the vesicles had become very large and cystic. Fœtal adenomata had been found in a few cases in very large numbers and extremely small. They could be recognised when 1 mm. and 0·4 mm. in diameter. 2. The changes in the gland tissue were of chief interest in relation to the possible connexion between so-called primary and secondary Graves's disease. Four illustrative cases were described in detail. The conclusions drawn were: 1. That the condition of the vesicles in some forms of inflammation such as followed a tracheotomy wound might be identical with that in cases of Graves's disease. 2. That primary Graves's disease was occasionally found associated with changes in the thyroid which were focal in character. 3. That in forms of goitre other than Graves's disease—viz., adenomatous and adeno-parenchymatous—the presence of nervous symptoms was commonly associated with the occurrence of histological changes in the thyroid gland tissue, consisting of local accumulations of round cells and alterations to a more or less extent in the surrounding vesicles. 4. In certain forms of goitre the histological characters were such as to suggest a diffuse chronic inflammatory condition—viz., marked plasma cell infiltration and endarteritis; in other cases similar changes were found in localised areas. Many attempts had been made to find evidence of organism infection, including bacteriological examination of the tissue and animal inoculations. The results had been entirely negative. The histological characters at any rate suggested a toxic substance in the gland—in some cases diffuse, in others localised. As to its nature and origin they were at present entirely in the dark.

The PRESIDENT, Professor J. LORRAIN SMITH (Manchester), and Mr. J. GRAHAM WILLMORE (Gabel el Tor) briefly discussed Miss Chambers's conclusions, the last-named pointing out the advisability of examining the stools of all cases of endemic goitre in view of the fact that amœbæ had so frequently been demonstrated in the fæces in epidemic goitre.

The PRESIDENT then vacated the chair, which was occupied throughout the subsequent proceedings by Dr. A. E. MOORE, Vice-President of the Section.

Dr. LAZARUS-BARLOW demonstrated the entire series of lantern slides illustrating the skotographic experiments which formed the basis of the Goulstonian lectures before the Royal College of Physicians of London, which have already been reported in THE LANCET.

Dr. LAZARUS-BARLOW replied to some questions from Professor A. R. FERGUSON (Cairo) and Professor LORRAIN SMITH.

Mr. CECIL W. ROWNTREE (London) read a paper on

X Ray Carcinoma,

illustrated by numerous lantern slides. This paper was based upon Mr. Rowntree's Hunterian lecture, which we published in our issue of March 20th, p. 821.

Professor LORRAIN SMITH demonstrated some museum preparations of stomach, liver, and lung from an interesting case of

Cancer of the Pylorus,

in which the patient, a woman aged 35 years, had developed respiratory symptoms accompanied by foul expectoration during the latter part of her illness. Post-mortem examination showed the existence of a large carcinoma occupying the mucous membrane and walls of the pyloric orifice; the diaphragm was covered with flat scale-like deposits; in the liver were a few small secondary nodules; the retro-peritoneal glands in the lumbar region were enlarged; and a small mass of cancerous growth was found in the pouch of Douglas. The lungs were uniformly invaded by new growth in the form of columns of cells occupying the lumen of the lymphatics to such an extent that their presence could be traced over the pleural surface as a delicate meshwork of yellowish lines outlining the lobules, and on section of the lung as small yellow points. Microscopical sections, of which photographs were shown, demonstrated the presence of mucoid degeneration of the cells of the original tumour. In the lung, on the other hand, an excessive number of cells loaded with globules of myelin were found in the alveoli. In sections of the bronchial glands myelin could be seen in the stroma of the glands, but none in the enclosed areas of lymphoid tissue—points which were well brought out in the lantern slides of the photo-micrographs taken by the aid of polarised light.

THURSDAY, JULY 29TH.

In the morning this section joined forces with the Section of Hæmatology and Vaccine Therapy in the surgery class-room, under the joint presidency of Sir ALMROTH WRIGHT and Professor SYMMERS, for the purpose of discussing

The Early Diagnosis and Treatment of Tuberculosis,

and an account of the morning's proceedings will be p [illegible] e T. [illegible] d [illegible] tion of Blastomycetes and Cancer and the effects of antitoxic serum upon experimentally produced cancers was given in the pathological museum by Professor SANFELICE (Bologna).

PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 28TH.

President, Dr. T. OUTTERSON WOOD (London).

The PRESIDENT opened the section with some introductory remarks on the subjects and papers selected for discussion. He then pointed out the relationship of the specialty to general medicine. At one time the study of mental diseases was looked upon as something apart from the subjects considered necessary in the medical curriculum, and he well remembered the almost exclusive nature of the study of psychological medicine when he first became connected with asylum work over 40 years ago. Fortunately, the subject was now taught and included as compulsory in all examinations for medical qualifications. The fact of having a section assigned to them could not fail to be advantageous to the study of mental diseases and tended to keep up the medical spirit in asylum work. The promotion of a closer connexion between psychiatry and neurology [illegible] a matter well deserving atten- [illegible] overlapping in these subjects [illegible] consider the advisability of extending the scope of the section so as to make it include these two kindred subjects. There was in the study of insanity, quite apart from that of asylum administration, so much medical work which trenched closely upon and in many instances included neurological problems that it could not fail to be to the mutual advantage of the students of both to have these two subjects combined in one section.

The following resolution was proposed by the PRESIDENT and seconded by Dr. D. G. THOMSON (Norwich):—

That in the [illegible] bjects of [illegible] and the [illegible]

A second resolution was proposed by Dr. W. R. DAWSON (Dublin) and seconded by Dr. M. J. NOLAN (Downpatrick):—

[illegible] authorities of [illegible] University of [illegible] establishing [illegible] lical faculties [illegible]

A third resolution was proposed by Mr. G. R. LAWLESS (Armagh) and seconded by Dr. T. D GREENLEES (Streatham):—

That this section desires to express its approval of the principles of the Asylum Superannuation Bill now before Parliament.

These resolutions were carried with instructions that they be forwarded to the Council of the Association for consideration.

Dr. J. M. MACCORMAC (Belfast) read a paper on

The Superficial and Deep Reflexes as an Additional Means in the Diagnosis of the Principal Forms of Mental Diseases.

This subject, so far as he was aware, had not received attention in this country. The conclusions he had arrived at after careful observations for many years were much in harmony with those of Agostini. 1. He first reverted to the subject of *crossed knee-jerks* If the patellar tendon on one side were struck the opposite leg would be adducted mainly by the action of the crureus and vastus internus, which muscles were seen to contract even when the movement was slight. This patellar jerk was a true reflex, and he had observed in certain forms of sclerosis of the spinal cord that a slight percussion would cause the knees to knock together and at the same time the arms were adducted. These actions soon lessened and passed into a state of tremor which gradually disappeared. 2. His observations on the superficial and deep reflexes in their relation with the modification of painful sensibility in mental disorders had shown him that it was possible to establish some formulæ which corresponded in a general way to the state of the reflexes in each of the principal forms of mental disorder and which, in consequence, were not without value in the diagnosis of these affections. In *general paralysis of the insane* the condition of the reflexes varied in the different stages of the disease. In the initial stage of this disease there was generally a weakening of painful sensibility and of the cutaneous reflexes with the exception of the plantar reflex. On the other hand, the deep reflexes were exaggerated. In the second stage of the disease the plantar reflex was very markedly exaggerated, and all other reflexes, both deep and superficial, were increased; the tendon reflexes were still more marked than in the first stage. In the third stage of the disease all the reflexes became weaker until they finally disappeared. During an epileptiform attack the superficial reflexes were decreased or abolished, but the tendon reflex was exaggerated and often accompanied by fibrillary contractions, which might be transmitted from a limb to the trunk and then might pass to the limbs of the opposite side. In *epileptic insanity* sensibility to pain as well as the reflexes produced by stimulation of the skin and mucous membranes were generally lessened. On the contrary, the tendon reflexes were normal. After some convulsive attacks the tendon reflexes were increased, whilst the cutaneous reflexes were considerably weakened with the exception of the plantar reflex, which was augmented, and might be associated with trembling or even with epileptoid movements of the foot. *Hypochondriacs and neurasthenics* generally presented an increase of all reflexes, both superficial and deep. In *hysteria* there was a decrease of painful sensibility and of the cutaneous reflexes. In *alcoholic paralysis* painful sensibility and tendon reflexes were exaggerated, whilst the cutaneous reflexes (except the plantar reflex) were weakened. In *acute mania* the reflexes were normal. In *secondary dementia* all reflexes were exaggerated. In *melancholia* painful sensibility and cutaneous reflexes were normal, whilst the tendon reflexes were exaggerated. In the stage of melancholic stupor painful sensations, which on superficial examination might appear feeble, were in reality normal; the cutaneous reflexes were feeble; the tendon reflexes were exaggerated. The above statements showed how employed was that introduced by Mr. Barker, and he felt strongly that it was the best. By the use of a fluid heavier than cerebro-spinal fluid one had definite control over the distribution of the analgesia. He advocated a preliminary injection subcutaneously of a weak solution of cocaine. In this way the subsequent intra-spinal injection was rendered painless. Spinal anæsthesia was useful in preventing shock. In very nervous persons he was in the habit of employing spinal anæsthesia in the usual way, and later of giving in addition just so much ether, by the open method, as would obliterate consciousness. He considered this combined method of great use in nervous persons and in cases where great shock was feared, as in amputation through the thigh or disarticulation at the hip-joint.

Dr. G. A. H. BARTON (London) was convinced that the merits of spinal analgesia could not compare with those of general anæsthesia. In a considerable percentage of cases failure to produce analgesia occurred. The after-effects, both immediate and late, were serious. In the majority of cases the retention of consciousness was a drawback. In a few cases, as in the regurgitant vomiting of intestinal obstruction, it was an advantage, because it made inhalation of the vomit impossible. He believed that the proportion of deaths was as high as 1 in 500, and this was to an anæsthetist an appallingly high figure. He believed that in the future the use of spinal anæsthesia would be confined within very small limits.

Mr. C. A. LEEDHAM-GREEN (Birmingham) gave particulars of his four and half years' experience with spinal anæsthesia. From the surgeon's point of view the anæsthesia was perfect In his own practice he had seen little of complications and after-effects and the headache was usually quite trivial and transient. It was a great advantage that the patient could be given liquid nourishment at once.

Dr. V. G. L. FIELDEN (Belfast) believed that the greatest drawback to the use of spinal anæsthesia lay in the impossibility of altering the dose. Once the fluid was injected it was impossible to get it out. Yet it was usual, in inducing general anæsthesia, to find that two successive cases required widely different quantities of the drug.

Professor W. E. DIXON (Cambridge) said that he had made use of intraspinal injections only in animals. He suggested that some of the unfortunate after-effects might be due to leakage of cerebro-spinal fluid from the spinal theca rather than to the direct effect of the drug. He thought that the paralysis described was probably peripheral in origin and not due to changes in the spinal cord.

Mr. CHIENE replied.

Mr. A. E. BARKER (London) read a short note upon the

Elimination of Stovaine after Spinal Analgesia.

Before spinal anæsthesia could be assigned its proper place it was necessary to know: (1) how long the anæsthetic agents remained in the dural canal, and what effects apart from analgesia they produced there; (2) what immediate or remote effects the drugs employed had on the structures with which they came in contact; and (3) how the drugs injected were eliminated. He himself had investigated only stovaine. He had used a method which would indicate the presence of stovaine in a dilution of 1 in 150,000. He quoted figures to show that the drug could usually be detected within the dura mater for about two days 48 hours after injection the cerebro-spinal fluid was invariably turbid from the presence of leucocytes. In a case examined three days after puncture there was no sign of local inflammation. Although the drug could be detected for 48 hours the average duration of analgesia was only from one to two hours. In the urine no stovaine could be found until the forty-fifth hour. Post-mortem histological examination of the cord gave contradictory results.

HÆMATOLOGY AND VACCINE THERAPY.

WEDNESDAY, JULY 28TH.

President, Sir ALMROTH WRIGHT (London).

The PRESIDENT opened the proceedings with a discourse on

Retrospect and Prospect in Vaccine Therapy.

He expressed his satisfaction at the action of the Association in creating such a section, which had rather surprised him since it was only eight years since he first called attention to the curative properties of vaccines in connexion with staphylococcic infections. He traced the history of vaccination, commencing with Jenner down to Pasteur, who worked chiefly with rabies and prophylactic inoculation against various diseases of animals; Ferron, who initiated anti-cholera vaccination, and Haffkine who continued this work. Up to this time only living microbes were used for the purpose of immunisation, but in the antityphoid vaccination which he himself had initiated, and later in Haffkine's antiplague work, living cultures were definitely discarded in favour of vaccines killed by heat, and at the same time it was only with this antityphoid work that the changes in the blood following inoculation were studied and the dosage scientifically adjusted. Leaving prophylactic inoculation, the President traced the course of therapeutic use of vaccines, beginning with tuberculin, which, used empirically, as it was at first, he described as a jump in the dark, which jump fell far short. He insisted on the great importance of controlling such inoculations by blood tests when experimenting with new vaccines, as without such they were in the same posision as the early users of old tuberculin, who were quite ignorant of the changes they were inducing in the body by their inoculations. It was only by systematic blood tests that the great importance of the negative phase was recognised and the consequent necessity for the use of minute doses of the vaccine. He deplored the lack of enthusiasm in this country as regards medical research, and thought it a pity that whereas sportsmen could be found who would institute an anti-grouse league for the investigation of grouse disease, yet it seemed impossible for a like number of persons afflicted with diseases such as bronchitis, asthma, or the like to form anti-bronchitic or anti-asthmatic clubs for the investigation of that specific complaint.

Mr. L. NOON (London) read a paper on

The Influence of the Site of Inoculation on the Immunity Produced.

He said that there were three alternatives which might be suggested as to the origin of antibodies in response to the inoculation of antigens: (1) they are formed after absorption of the antigen into the circulation and, either in the blood-stream or in some tissue, which cannot yet be defined; (2) they are formed from the tissues at the site of inoculation; (3) they are formed by the leucocytes, either at the site of inoculation or elsewhere. If (1) be accepted then the site of inoculation is only important as it determines a quicker or slower absorption. But, assuming (2) or (3) to be true, the site becomes of great importance because we may be able to increase immunity by stimulating a sound tissue, without adding more poison to that added on by the structures in disease. The experiments quoted show that in normal rabbits inoculated with a vaccine of B. pseudo-tuberculosis rodentium three distinct types of immunising reaction followed respectively the subcutaneous, intravenous, and intraperitoneal inoculations. The reactions were measured by opsonic observations. Subcutaneous inoculation gave a good reaction without a preliminary negative phase, while intraperitoneal inoculation gave a marked and prolonged negative phase which was followed by a raised immunity only in some cases. Intravenous inoculation produced a good immunising reponse, preceded (in the case of large doses) by a well-marked negative phase of short duration. It is probable, therefore, that the subcutaneous tissues offer the safest site for therapeutic inoculation, and that these only become dangerous when the vaccine material is easily absorbed into the circulation. Such absorption can be combated at present by the use of minimal doses carefully controlled by experiment.

Dr. A. BUTLER HARRIS (London) said that when he first started using tuberculin he thought that it did not matter where the inoculation was given, but during the last two years he had found it of advantage to inoculate near the seat of the lesion.

Dr. W. M. CROFTON (Sutton Bridge) also discussed the paper.

Dr. F. L. GOLLA (London) read a paper on

The Anti-tryptic Index.

He referred to the electrical conductivity method of measuring this, which he described in THE LANCET of April 3rd last, and as an alternative method he has adapted the viscosity method of Spriggs, by which the test can be done at room temperature and the result can be obtained in 30 minutes. This simpler method gives almost as good results as the former one. The results show that the anti-tryptic power of normal healthy persons is constant within the limits of error. Patients were tested having varying degrees of fever and various indices were obtained, but there was no correlation between the temperature and the anti-tryptic power. In pulmonary tubercle some were found to have high indices and others were comparatively low, and while those with the low indices progressed on the whole, those with high indices gave the least favourable results with treatment. The effect of the injection of tuberculin on the index was to increase it markedly in those patients who had low indices, while its effect on those showing in the beginning high indices was very slight, if any. Several cases of pulmonary tuberculosis shortly before death all showed great increase in the antitryptic power, whereas some cases of purely surgical tubercle gave normal results. In other diseases there was often a marked increase in the index, and especially was this seen in pneumonia, where this high index was maintained without change for some time after the crisis. In scarlet fever, typhoid fever, [illegible] the index is to be regarded as due to the absorption of the products of cell destruction.

Dr. A. FLEMING (London) said that working with a method described some two years ago by Sir Almroth Wright he had found the index high in pneumonia and in tuberculous cases where there was a secondary infection, but in the patients with tubercle, in which there was no such secondary infection, the index was normal, from which he concluded that the rise in the index had no direct relation to the tuberculous infection; but was due to the secondary invasion with pyogenic bacteria.

Professor SANFELICE (Bologna) read a paper on the

Genesis and Cure of Malignant Tumours.

He divided workers in cancer into three categories: 1. Pure morphologists who did not indulge in experimental methods and who were violently opposed to the parasitic theory and who denied to those who hold to this theory even the intellectual capacity to understand what may be a carcinoma and what may be a sarcoma. 2. Experimentalists who in late years have almost all had a real mania for procuring for themselves a rat or mouse with a spontaneous tumour for initiating a series of transplantations through many generations, as if this method of research could solve the question. This, he considered, marks a retrogression, as most of the observers tend to elevate the neoplastic cell as an etiological agent in itself, returning thus to the ancient conception of Cohnheim. 3. Partisans of the parasitic theory grounded on the pathogenic action of blastomycetes. This consists only of few workers, if we exclude those who by publications based on little work tend to throw discredit on the theory. It is known that a malignant tumour may be transplanted from one animal to another, and if the second animal overcomes the first inoculation an immunity is established. The spontaneous tumours are, however, the secondary effect of a cause hitherto unknown, but from researches initiated in Cagliani in 1894 Professor Sanfelice found that in malignant tumours of men and animals there existed pathogenic saccharomycetes which, however, could only rarely be cultivated as they were transformed into Russel's atoms by the action of an antibody existing in the serum of the infected animal, the change being a fusion of the chromatic substance and resolution of the parasites into small round bodies. These blastomycetes in cultivation are seen to be coagulated exactly like those forms which were considered by Soudakewitch, Prusser, and Plimmer to belong to the protozoa. These blastomycetes inoculated into guinea-pigs and rabbits caused tumours consisting for the most part of parasites (pseudo-tumours), but when inoculated into dogs in smaller numbers they gave rise to true epithelial neoplasms. From his preliminary researches Professor Sanfelice was convinced that the parasites were not transported into the metastases of the tumours, but that these were due to some chemical stimulus, this being of the nature of a toxin elaborated by the blastomycetes in the tumour. He noticed that when he inoculated the parasites alone on to the trachea of a dog they multiplied but there was little cell proliferation. When, however, some of the culture medium was inoculated also there was marked proliferation of the cellular elements. He had obtained a fluid medium in which the blastomycetes produced a very active toxin which; when inoculated into animals, gave rise to malignant tumours similar in structure to those we meet with in man. Professor Sanfelice stated that with the discovery of the toxins we had explained the *genesis of malignant tumours.* The parasite exists in the mucous membranes or skin, and when for some reason or other the resistance of the body becomes diminished these multiply, producing toxin which stimulates the cellular elements to atypical proliferation. When the parasites die they excite an immunising response whereby antibodies are produced which transform the blastomycetes into little fuchsinophile bodies. These toxins when inoculated into dogs evoked the production of antibodies. First the attenuated toxin is introduced subcutaneously, then the integral toxin, and the antitoxins formed were at a maximum in three months. This antiserum is potent, one-tenth cubic centimetre being able to neutralise ten fatal doses of living parasites. The history of the tumour depends on the amount of immunising response; thus when there is a good response there is a slow growth or even retrogression, but when the response is weak then growth is rapid and dissemination early. As regards the treatment with his antiserum, Professor Sanfelice said that in all of 14 dogs affected with various malignant tumours complete recovery ensued in five or six months. If metastases were present these disappeared before the primary tumour. His work up to the present led him to believe that the same results can be obtained in man as he had obtained in animals.

Dr. CULLEN (Baltimore) congratulated Professor Sanfelice on his very important communication, and stated that he had had an opportunity of seeing the specimens of tumours before and after treatment with the curative serum, and they afforded a most conclusive proof of the great efficacy of the serum in malignant disease.

Professor SANFELICE subsequently gave a demonstration of his microscopical specimens in the pathological museum. The specimens shown comprised sections of spontaneous tumours which he had found in animals and also tumours which he had produced artificially by inoculation of animals with the products of his pathogenic blastomycetes. They formed complete series showing the remarkable changes which took place in these tumours as the result of the injection of his curative serum, the specimens having been taken before and at intervals during the course of treatment. Some of the tumours shown appeared to be of a typical carcinomatous nature, while others were sarcomatous in type, but in both the result of the injection of the serum seemed to be chiefly marked by a degeneration of the cells of the neoplasm till in the final stage when cure was complete there remained only a small amount of stroma, apparently absolutely devoid of cancer cells.

Dr. THOMAS HOUSTON (Belfast) read a paper on

Typhoid Carriers.

He referred to a case he had already published of a patient who had symptoms of cystitis accompanied by general ill-health, but who had no history of an acute attack of typhoid fever. His second case was reported in THE LANCET of Jan. 30th, 1909, p. 311. This patient suffered from headache but had no fever. Seven years ago she had typhoid fever, and since then six patients living in the same houses had developed the disease. This patient was cured with typhoid vaccine. The after-history of the patients infected by this case was as follows. The first made a good recovery. The second suffered from headache and malaise for six months but no investigations were made. The third, a nurse, was still infected with typhoid bacilli at the end of six months, but this cleared up with vaccine treatment. The fourth had typhoid bacilli in her fæces after six months and her serum gave a positive Widal's reaction. A dose of 50,000,000 typhoid bacilli raised the temperature for two days, after which it remained normal for three months. The case was then lost sight of. The third case investigated had had an irregular temperature for four months. Typhoid bacilli were found in the urine in large numbers. Her sister, returning from a holiday, developed typhoid fever, and six months afterwards still had typhoid bacilli in her urine. Both cases were treated with typhoid vaccine. The cases described were plasmon. Messrs. Savory and Moore, of 143, New Bond-street, London, W., exhibited a number of foods for infants and invalids, amongst the former being a food designed for use with fresh milk, the digestibility of which it promotes owing to the formation of curdy lumps in the infant's stomach being prevented. This firm also exhibited their well-known peptonised preparations of milk, milk and cocoa, and coffee and milk. Close by Messrs. Callard and Co., of 74, Regent-street, London, W., showed an interesting variety of starchless and sugarless foods and beverages, including jams, cakes, bread, marmalade, jellies, whisky, ginger ale, lemonade, and so forth. Vacca milk attracted considerable interest at the stall of the Vacca Milk Company, Limited, of Amsterdam, Holland, by reason of its excellent taste, fresh state, and quality, and yet it is sterilised but without being boiled. As we have pointed out in our analytical columns, there should be a great future for a process which has solved the problem of sterilising milk without heat and without the use of chemical preservatives. It is not surprising to learn that the milk is giving good results in dietetic practice both in regard to infant and invalid feeding. Amongst pre-digested foods of recognised value it is hardly necessary to mention Carnrick's beef peptonoids in the form of both liquid and powder (Carnrick and Co., 24 and 25, Hart-street, Bloomsbury, London, W.C.), which are necessarily rapid nutrients prepared with the aid of pepsin and pancreatin from beef, wheat, and milk. Special foods adapted for the use of sufferers from diabetes, dyspepsia, and obesity formed the feature of Messrs. G. Van Abbott and Sons' exhibit (Crosby-row, Borough, London, S.E.), which included an excellent series of preparations apropos of food in disease. Next was shown by M. Hoff, of 29, New Bridge-street, London, E.C., a liquid malt preparation possessing a higher nutritive value than stout, but practically without alcohol. Messrs. Keen, Robinson, and Co., Limited (incorporated with J. and J. Colman of London and Norwich), of Denmark-street, St. George's-in-the-East, London, E., had an attractively arranged stall on which were shown specimens of Robinson s "patent" barley and groats, both known for their excellent quality and appetising flavour; besides were samples of Colman's mustard and mustard oil and sinapisms. Digestive ferments and preparations embodying pre-digested meat foods were the decided feature of Messrs. Armour and Co.'s exhibit (Atlantic House, Holborn-viaduct, London, E C.). Thus there were elegant preparations of pepsin and pancreatin, glycerole pepsin and glycerole pancreatin, peptonising tablets and powders, peptones, glycerine extract of red bone marrow, bone marrow perles, suprarenalin preparations, trypsin and glycerole trypsin, lecithin, and a series of glandular extracts in powder and tablet form. There were several preparations of interest also on the stall of Messrs. Fairchild Bros. and Foster (London, E.C.), notably "pepules" containing digestive agents; panopeptin, a digested beef and wheat flour product of obviously rapid nutritive power; pepsencia, an aid to the gastric function, and specimens of lecithin. The entirely starch-free and soluble food of Messrs. Mellin (Peckham, London, S.E.), which when mixed with milk gives a food approximating to the composition of human milk, and, besides, is found to be digestible and nutritive, particularly for infants and for those prone to gastric disturbance, was the chief exhibit of this firm, but there were shown also some good biscuits and chocolate, and as accessories a graduated feeding-bottle and a "baby balance." "Virol" (Virol, Limited, 152–166, Old-street, London, E C.) is now firmly established as a valuable food in wasting diseases, which, having regard to its composition, is not surprising. It consists of bone marrow, red bone marrow, malt extract, eggs, and lemon syrup. Messrs. Bovril, of the same address, exhibited many specimens illustrating the applicability of bovril in a number of preparations to useful dietetics. Another well-known food product shown was Horlick's malted milk (Malted Milk, Limited, Slough, Bucks), a full-cream preparation modified by active malt extract, so that the digestibility of the milk protein is increased. Mr. A. Wander, of 1 and 3, Leonard-street, City-road, London, E.C., exhibited samples of ovaltine, which, as our own analyses have shown, contains all classes of reparative materials and includes also lecithin, the organic phosphorus compound, amongst other things, in egg and the milt of male fishes. The exhibit included an active dry extract of malt and formitrol, a pastille developing formaldehyde for the antiseptic treatment of the mouth and throat. Messrs. Brand's stall (11, Little Stanhope-street, Mayfair, London, W.) offered a remarkable variety of invalid foods, including the essences of beef, mutton, veal, and chicken, while there were also various meat jellies which have a reputation as attractive and nutritious preparations in the invalid's dietary. Cocoa was worthily represented by Messrs. Cadbury, Brothers, Limited, of Bourneville, near Birmingham, who drew the attention of the visitor to the care taken to maintain strict hygienic conditions at their works. A life-sized model of one of the prize Hereford bulls kept on their estancias in the Uruguay and Argentine Republic served successfully to attract visitors to the exhibit of the Liebig's Extract of Meat Company (4, Lloyd's-avenue, London, E.C.), whose representative, Mr. Mason, explained the merits of the beef preparations shown, especially in regard to their use for invalids. A point in considerable favour of the Liebig's Company's animal food products is that they are obtained under a system of medical and scientific control which precludes their contamination by disease.

(To be concluded.)

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the above Fund 22 cases were considered and grants amounting to £195 voted to 19 of the applicants, three cases being passed over. Four annuitants were elected to fill vacancies caused by deaths. Appended is an abstract of the cases relieved by grants:—

Daughter, aged 70 years, of late M.R.C.S. No income; has been supported for several years past by a brother who is now compelled to withdraw his help. Relieved once, £10. Voted £18.

M.B., C.M. Glasg., aged 56 years. Is not in very good health and finds difficulty in obtaining suitable work. No children. Voted £5.

Daughter, aged 73 years, of late M.R.C.S., who practised as an army surgeon. Lost everything through the dishonesty of the family solicitor (since struck off the Rolls) and has exhausted a small legacy received a few years ago. Voted £18.

Widow, aged 58 years, of M.R.C.S., L.S.A. Supports herself by letting lodgings, but is in arrears with rent owing to last year's bad season, and is now threatened with loss of her furniture. Voted £16.

Widow, aged 71 years, of M.R.C.S. Only income the Old Age Pension of 5s. a week, and is crippled by rheumatism and sciatica. Voted £12.

Widow, aged 43 years, of M.R.C.S., L R.C.P. Quite unprovided for at husband's death in January last and dependent on relations who can ill afford to help. Two children, aged nine and seven, both candidates for institutions. Voted £10.

Daughter, aged 58 years, of late L.S.A. No income; lets lodgings, but finds the profits insufficient for her support. Relieved once, £12. Voted £12.

Widow, aged 52 years, of L.R.C.P. No income; is in ill-health and unable to follow any active employment. Only child barely self-supporting. Relieved twice, £24. Voted £12.

Widow, aged 40 years, of L.R.C.P. Edin. Supplements a small income by district nursing, but has incurred unusually heavy expenses through the illness of one of her children. Relieved twice, £10. Voted £5.

Widow, aged 63 years, of L.R.C.P. Edin. Has an annuity of £20 and earns a few shillings a week by addressing envelopes and by needlework. Two sons, but neither able to help. Relieved 12 times, £126. Voted £5.

Daughter, aged 28 years, of late M.D. Dub. Has never had good health, and at present is quite unable to follow any employment and dependent on mother whose income is less than £1 a week. Relieved four times, £25. Voted £5.

Widow, aged 48 years, of L.R.C.S. Edin. Income £16 a year, and receives assistance from her mother. Children unable to help. Relieved five times, £50. Voted £5.

Widow, aged 40 years, of M.R.C.S., L.R.C.P. Has supported herself as a working housekeeper, but is losing her post through the breaking up of the home. Two children, aged 18 and 14 years, the younger in bad health following influenza. Relieved five times, £35. Voted £10.

Widow, aged 48 years, of L.R.C.P., L.R.C.S. Edin. No income and children only able to give very slight help. Relieved 13 times, £141. Voted £5.

M.D. Lond., aged 67 years. Is quite incapacitated by hemiplegia and dependent on friends who can ill afford to help. Relieved once, £18. Voted £18.

L S.A., aged 63 years. Only income an Epsom College pension and suffers from a nervous complaint which quite prevents practice. Children unable to help and wife dying from new growth. Relieved three times, £54. Voted £10.

Daughter, aged 63 years, of late M.D. Only income a few shillings a week, and has been obliged to give up post as companion on account of ill-health. Relieved twice, £24. Voted £12.

Widow, aged 73 years, of M.D. Glasg. Lets lodgings but has had one set of rooms vacant for six months. Children unable to help. Relieved six times, £31. Voted £5

Daughter, aged 63 years, of late L.S.A. Only income a small annuity and has to support an invalid sister who is entirely without means. Relieved 11 times, £103. Voted £12.

Subscriptions may be sent to Dr. S. West, treasurer, 15, Wimpole-street, London, W.

THE LANCET.

LONDON: SATURDAY, AUGUST 7, 1909.

The British Medical Association: The Address in Obstetric Medicine.

THE unique facilities afforded in Ireland for the clinical study of obstetric medicine have enabled the Irish school of obstetricians to attain a position of acknowledged eminence in this branch of medicine. It was therefore most fitting that one of that school should be selected to give the Address in Obstetrics at the meeting of the British Medical Association at Belfast. In his most interesting address (which is printed in another part of our present issue) Sir JOHN BYERS surveyed the modern position of obstetric medicine and surgery, and suggested the lines of advance along which progress may be expected in the future.

A quarter of a century ago, on the occasion of the first meeting of the British Medical Association in the north of Ireland, the late Dr. GEORGE KIDD delivered an Address in Obstetrics, selecting for his subject puerperal fever, even now the most important question in this field of practice. At that date (1884) the belief in the epidemic occurrence of child-bed fever still prevailed, and Dr. KIDD came to the conclusion that there were a large number of cases which came within such a definition, and that the epidemic thus constituted was a specific disease. During the quarter of a century which has elapsed since that time our knowledge of the causation of puerperal infection, as we prefer to call it at the present day, has become much more exact; we know that it differs in no way from surgical septicæmia, and we have a very accurate knowledge of the numerous organisms which play a part in its causation. Indeed, in lying-in hospitals the prevention of the disease has reached such a pitch of perfection that it may be considered to have been banished from all such institutions, at any rate in its severer forms, with the rarest possible exceptions. No longer do we reckon the success of these institutions by their mortality rate, but rather by their morbidity rate. It is a great pity, as Sir JOHN BYERS points out, that the various maternity hospitals are not agreed as to the physical indications of puerperal septic morbidity. It would be of the greatest value in the compilation of statistics if some general agreement on this matter could be come to. At the present time almost every hospital has a standard of its own, with the result that there is a good deal of confusion. We could wish that they would all adopt some such standard as that recommended by the Committee on Puerperal Morbidity appointed by the British Medical Association, since the actual standard determined upon is not of so much importance as uniformity in the matter. The extreme importance of the morbidity of child-bed is well known to all gynæcologists; indeed, it may truthfully be affirmed that the gradual diminution in the number of such cases, which we may hope the future will bring, will result in a great lessening of the cases of chronic pelvic inflammation which at the present time are so common amongst gynæcological patients. That such a diminution is even now occurring and at a progressive rate Sir JOHN BYERS demonstrates by quoting the statistics of the Rotunda Hospital, where the percentage of morbidity has shown a steady decrease during the last few years. And this improvement is seen also in the results of the practice of the Belfast Maternity Hospital, and, indeed, in all the lying-in hospitals of the country. It has been brought about by the recognition of the fact that labour is a natural process, in the great majority of cases not needing any interference, by the thorough application of the most minute surgical cleanliness, and by the observance of CREDÉ'S teaching that even the simplest internal manipulation in a lying-in woman may cause septic infection. At the present time, when so much is being made of the necessity for instructing students in the methods of external examination, it is interesting to read the quotation given by Sir JOHN BYERS from CREDÉ'S views enunciated as far back as 1886, where he says, "To instruct their pupils as thoroughly as possible in this method of external examination is the present and future duty of teaching institutions." It has been objected that cases of puerperal septic infection occasionally arise even when the patient has never been examined internally at all, and such instances have been cited as examples of auto-infection. It is impossible to say that cases of auto-infection never occur, but as a rule in these cases a source of the infection will be found either in some other part of the patient's body or in her environment. In the etiology of the great majority of the cases of puerperal infection we may consider it certain that auto-infection plays no part, and it is our duty to rigidly exclude all possibility of failure in regard to our observance of surgical cleanliness before comforting ourselves with the conclusion that the patient has infected herself. At the present time there is a small but steady decline going on in the death-rate from puerperal infection in England and Wales, and we may hope that this is the result of the greatly improved teaching which students and nurses undoubtedly are now receiving. The death-rate is still one of appalling magnitude when we consider the results obtained in lying-in hospitals, but that there is hope for the future may be gained from a perusal of the figures which Sir JOHN BYERS quotes.

In his survey of the improvements which can be recognised in the field of operative midwifery Sir JOHN BYERS calls attention to the increasing tendency to avoid craniotomy if possible on the living child. It is not practicable at present, nor indeed do we think that it ever will be, to exclude craniotomy entirely from the field of operative midwifery, but with a better knowledge of the course of labour in cases of contracted pelves and with the more general performance of Cæsarean section we may hope for a further decrease in the number of these horrible operations. The results obtained of recent years in maternity hospitals in the treatment of cases of contracted pelves have served to demonstrate in a most striking fashion that a very large percentage of such cases will terminate spontaneously without interference. Indeed, in Professor SCHAUTA'S clinic at Vienna in no less than 80 per cent. of the cases of contracted pelves labour occurs spontaneously at full term. Not only does labour terminate in these cases without artificial aid, but the results surpass those obtained by any other mode of treatment than Cæsarean section. Sir JOHN BYERS shares the dislike which is felt by so many German and American obstetricians to the induction of premature labour in the treatment of contracted pelves. The gradually increasing opposition to this operation is most curious and is opposed to the opinion held as to its merits by the London school, who practise it extensively with very good results, both to the mothers and the children. The recommendation given for the performance of pubiotomy in cases where the child is alive and uninjured will not find much endorsement among English obstetricians, for this operation appears to have made but little headway in this country.

In considering the future development of obstetrics the speaker referred to the more thorough practical training of students and pupil midwives, the public health aspect of obstetric medicine, and the more intimate association in the future of the physiological chemist and the pathologist with the practical obstetrician. The movement for the more practical training of students, initiated by a committee appointed by the Royal College of Physicians of London and also by the General Medical Council, has made considerable progress; and at the present time examining bodies, following the lead given them by the University of Cambridge, are beginning to move in the matter. The University of Belfast has adopted the recommendations of the General Medical Council, and has decided to hold a clinical examination in midwifery and gynæcology. But we fear that the suggestions put forward by Sir JOHN BYERS as to raising the standard of general education among midwives and his proposal to increase the duration of their training to six months or even to one year are quite impracticable. That a midwife should have had a surgical and medical training if possible we quite agree, but in view of the great difficulty which exists in obtaining the necessary number of women to take up this profession any attempt to increase the expense attendant upon the training is bound to meet with failure.

Among the urgent necessities of the future are an increased knowledge of the many problems connected with ante-natal pathology and an increased knowledge of the best means for combating these conditions. The modern obstetrician, as Sir JOHN BYERS truly says, has two duties constantly impressed upon him: he must look after the interests of the mother, not merely in her hour of trial at childbirth, but also before and after that event, and he must also have a thorough acquaintance with the best means of preserving the life and promoting the growth and welfare of the newborn infant. If the ideal of a healthy mother and a healthy child is to be realised, then more and more among the people must be spread the knowledge of motherhood. Much of the heavy infant mortality which to-day prevails in all our large cities is due to the entire absence among the mothers of the *poor of even the most elementary knowledge of* what is required for the proper rearing of healthy children. The problem of better training for the medical man and the nurse is an important one, but not one whit less important is the training of the mothers themselves, so that the advantages of the skilled advice given by the trained practitioner and nurse may not be entirely thrown away. Much has been done in this direction of late years, but much remains to be accomplished. The large amount of assistance which the physician of the present age derives from the worker in the pathological laboratory is one of the most striking features of modern medicine. Who can doubt but that many of the problems in connexion with such a disease, for example, as eclampsia, will be solved ultimately by the joint coöperation of the clinician and the research worker in the laboratory? To attempt to practise scientific medicine without the assistance of the physiological chemist or of the clinical pathologist is an impossibility, and if the science of obstetric medicine is to advance in the future so as to enable us to solve the many problems which still confront us it must be by the cordial and combined efforts of all these workers.

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Mortality Statistics and Public Health.

FAMILIARITY with the history of sanitary progress in England during the last quarter of a century makes it impossible to doubt the beneficial effect which the publication of mortality statistics has exercised on public health administration throughout the country. It would, indeed, be difficult to over-rate the influence on public health of the 70 annual reports issued since 1837 by successive Registrar-Generals, with the help of their medical advisers, Dr. FARR, Dr. OGLE, and Dr. TATHAM. The present time, when the General Register Office is passing under the control of a new Registrar-General and a new Medical Superintendent of Statistics, seems opportune for seriously considering whether, in the interests of the public health, the value of these annual reports could not be further increased and their influence on sanitary progress strengthened.

Medical officers of health and those of the public who are interested in mortality statistics can scarcely fail to regret that the main statistical units in the Registrar-General's annual reports still continue to be the registration districts, and the aggregations of those districts, called registration counties, instead of sanitary districts and administrative counties as they should be. This defect is due to the fact that the system for the registration of births and deaths was, by the Act of 1836, based upon the Poor-law organisation, because at that time no systematic sanitary organisation existed. The value of the Registration Act, as a basis for vital statistics and for promoting public health, was, indeed, scarcely recognised by its promoters, and even the provision of a column in the Death Register for recording the cause of death was an afterthought. The Act provided that each Poor-law union should be divided into registration sub-districts and that a registrar of births and deaths should be appointed for each sub-district. Since 1837 every change in the boundary of a Poor-law *union has necessitated a* corresponding change in the registration district, and frequently also in the registration county. Thus in the earlier annual reports of the Registrar-General the vital statistics necessarily dealt almost exclusively with Poor-law areas. Since the creation of sanitary districts and of administrative counties, which are but seldom co-extensive with registration districts and registration counties, a desire has naturally arisen for official statistics relating to administrative areas. It cannot be denied that the omission of such statistics detracts from the practical value of these annual reports, since the local influence of official mortality statistics for the promotion of public health is inappreciable unless the statistics relate to the exact boundaries of the several administrative areas. It is, moreover, impossible to overlook the importance of authoritative statistics for administrative areas to the Medical Department of the Local Government Board, which department, it may be hoped, will one day form part of an independent ministry of public health. It is true that the weekly and quarterly returns of the Registrar-General, and his annual summary, contain valuable, although somewhat rudimentary, statistics relating to 76 of the largest English towns, directly derived from returns furnished by the local registrars of those towns. The annual reports, however, contain no particulars of ages and causes of death in sanitary administrative areas (except in London), although these statistics would be infinitely more useful than the statistics now prepared for registration districts and counties in which no one is really interested. This defect applies equally to the decennial supplements to the annual reports, the value of which would undoubtedly be increased by the substitution of tables relating to sanitary areas and administrative counties for those relating to registration districts and counties, which in Dr. TATHAM'S last Decennial Supplement, for the years 1891-1900, occupied more than 700 pages. The sex, ages, and causes of death have been invariably classified at the General Register Office for each registration district separately. But the best interests of sanitary progress would seem to require that future reports of the Registrar-General should contain additional mortality tables relating to a certain number of the larger towns, which tables might be somewhat similar in character to those relating to registration districts in the last Decennial Supplement.

We are informed that in certain instances the registration districts are already co-extensive with urban sanitary districts, and that the separate classification of small numbers of deaths in cases where portions of a sanitary area are situated in two registration districts would not involve serious additional labour, whilst it would add materially to the utility of the results. If tabulated statistics relating to all towns that are now co-extensive with one or more registration areas were at once added to the annual reports, the separate classification of parts of registration areas that would render statistics available for other towns could be added from time to time. In anticipation of probably far-reaching changes in Poor-law organisation in the near future, which may facilitate the substitution of sanitary districts for the present registration districts, it seems not only desirable but quite practicable, to increase the value of the Registrar-General's annual reports by the preparation and publication of statistics for administrative counties, and for so many of the larger sanitary districts as may from time to time be found desirable.

"Secret" Remedies.

WE published recently[1] a valuable letter from Mr. G. P. FORRESTER upon the restriction of unqualified practice and the sale of secret remedies in Germany. This week a somewhat similar letter has reached us from a correspondent in Sweden, and the two communications may well serve both to call attention to the character of the traffic in "secret" remedies as it is carried on in Germany and in Sweden, and also to the efforts which are being made in those countries, either by public authorities or by professional bodies, to diminish the evils which this traffic brings in its train. The tendency to purchase quack medicines, and to believe in the representations of quacks, has existed from time immemorial, and was satirised by GOLDSMITH, 150 years ago, in terms which would require little alteration in order to render them equally applicable to the conditions of the present day, were it not for the increased facilities for advertising which have been created by modern conditions, and for the somewhat increased deference now paid to financial prosperity, without reference to the manner in which it has been attained. GOLDSMITH'S Chinese philosopher regarded it as marvellous that, although there was no disease which was not curable by a specific which could be bought for half-a-crown, there were still people who thought it proper to be ill or even to die; and he also wondered that so many of the most highly gifted of the quacks of the time had remained unconscious of their powers of healing until a bankruptcy or a residence in jail had called those powers into exertion. In the present day the "proprietors" of quack medicines drive about in carriages, are permitted to mix with decent people, and endow charities when they die; but the essential nature of the creature remains unchanged. He is still a useless and dangerous parasite upon the body politic; he robs the sick poor of sums of money which in the aggregate are enormous and which in detail are often obtained for him only at the cost of much privation; his preparations, composed of the most familiar drugs and sold at 50 times their value, are often (as in the case of many drastic purgatives) absolutely injurious to those who make a practice of swallowing them; and are still more often negatively injurious by interfering with proper treatment. A familiar example of this is furnished by the preparations which, under various names, are sold for the cure of "blotches" and other affections of the skin, and which generally owe a totally deceptive efficacy to iodide of potassium. They frequently do apparently "cure" the condition for which they are administered; and they leave the "cured" person to infect wife and children with syphilis, or possibly to die himself from some of its tertiary forms. Another difference between GOLDSMITH'S quack and our own is that the former was often ignorant of the mischief he was likely to be instrumental in effecting; while in the present day the putting up of a "secret" remedy in a permanent and attractive form requires the possession of at least some small amount of pharmaceutical knowledge, knowledge which must be sufficient in most cases, and especially in those of the many alcoholic and narcotic "remedies" now placed upon the market, to render him fully cognisant of the grievous injury to individuals and to the community which the consumption of his preparations is likely to produce.

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[1] THE LANCET, July 17th, p. 183.

Our correspondent who deals with the question as it presents itself in Germany tells us that in the financial year 1898–99 a sum of one million and a half sterling was spent there on secret remedies; and we have seen an estimate, based upon the returns of the Stamp Office, showing that about double this amount is annually spent in the same way in the United Kingdom. It is not quite clear what population the word "Germany" embraces, but it must in any case be a larger one than our own, and hence the various restrictive measures described in the letter must have at least some effect in reducing the dimensions of the evil. What these dimensions are among ourselves we shall probably hear before long as a result of the inquiry which, at the instance of the General Medical Council, the President of the Local Government Board has decided to institute through the medium of medical officers of health; and we may reasonably hope that it will then become possible to follow to some extent the example which has been set in Sweden, and to obtain combined action from the legislature and from the professions and callings interested, for the purpose of diminishing an evil which everyone must admit to be serious. The credulity by which quackery and quack medicines are supported is primarily, of course, a result permitted by defective education; often not defective as far as the "humanities" are concerned, but defective, or even non-existent, with regard to the laws of life and health, laws of which it is not uncommon for our legislators to display the most supreme and ghastly ignorance. We think it probable that no small amount of light would be thrown upon the subject if the coöperation of the Board of Education could be obtained in the conduct of the projected inquiry, and if the medical officers appointed to conduct the medical inspection of school children could be instructed to ascertain, as far as might be possible without impertinence, the nature of the prevailing mental attitude of the teachers of elementary schools towards quack medicines, and their habits with regard to the practice of buying or swallowing them. We should not be in the least surprised if it were found that teachers, as a rule, share the popular view that a disease is a definite entity, like, as Miss NIGHTINGALE said, "a cat or a dog," and that a "remedy," calculated to expel it from the system, can be purchased in a bottle and successfully applied without examination of the actual state of the sufferer. This belief is, in fact, the foundation upon which the whole iniquitous system of "secret" remedies is built up; and the growing influence of the healing profession upon the teaching profession can be exerted in no better way than in assisting to dispel it. The practice described as prevailing in Sweden, of making public the composition of "secret" remedies, and of showing the ordinary worthlessness of their ingredients, is one which might probably be adopted in this country with excellent eventual results.

A very serious question in relation to all forms of quackery is the great and increasing assistance furnished to them by the newspaper press, and also, it may be said, by the printing trade in general, a trade of which quacks are munificent patrons. According to our correspondent, the Swedish press is fully aware of the nefarious uses to which its advertising columns are applied, and professes absolute inability to interfere by any attempt to exclude fraudulent advertisements. We have heard much the same thing said in this country, and we remember that it formed the staple excuse of the incriminated papers for the harvest which they were deriving from the scarcely-veiled advertisements of abortionists at the time when we called attention to the facilities offered by the press for the commission of grave crime. The excuse seemed and seems to us a wholly insufficent one. The conductors of newspapers are perfectly well aware that, in the existing stage of public education, thousands of people have learned to read who are absolutely incapable of exercising any sound judgment about the printed matter which is placed before their eyes, and who really draw no distinction between what "the paper" says about somebody's pills and what it says about the movements of Royalty, or about the Budget, or the unemployed. The power of the press is greatly in excess of the knowledge of large numbers of those to whom its columns are addressed, and we cannot admit the complete freedom from responsibility for advertisements which is frequently claimed on its behalf. Moreover, many of the statements commonly put forth by quacks are so preposterous in their own nature that the credulity of ordinary ignorance would require reinforcement by the supposed authority of the "paper" before any belief in them leading to expenditure could be rendered even possible. An enormous step would be gained if the proprietors of patent medicines were compelled to disclose their composition. It would then be open to professional associations to make widely known the nature, the properties, and the intrinsic value of every such compound, and to show that the claims put forward on its behalf had no justification. Such exposure, in the case of the quack medicines containing appreciable quantities of alcohol, morphia, or cocaine, might open the eyes of the public to the dangers incidental to swallowing them, and it would also afford to purchasers the protection of the ordinary law which secures that goods sold shall be of the nature and kind demanded by the buyer and specified by the seller.

Annotations.

"Ne quid nimis."

THE EXTINCTION OF YELLOW FEVER AT RIO DE JANEIRO.

FOR many years Rio de Janeiro has had an unhealthy reputation, more particularly as regards yellow fever. In some degree this bad name was due to the fact that a very large proportion of the deaths from this disease occurred among the newly arrived foreigners or immigrants, no less than 83 per cent. of the yellow fever deaths, increasing to 90 per cent. in epidemic years, being referred to them. With varying conditions the number of deaths fluctuated from year to year. In the 13 years period ended December, 1902, the yellow fever deaths amounted to 22,506, or an annual average of 1731, and during that time the disease was regarded as highly infectious. Much attention was therefore devoted to thorough disinfection of clothing, bedding, and other effects of the sick, but with little result. Some time back the Brazilian authorities had their sanitary conscience awakened, and thereafter strove to find means for reducing the deaths from yellow fever in Rio de Janeiro. To this end a reward of 500,000 francs was offered to anyone who would invent or discover a specific remedy for the disease. Later the success of the American methods in Cuba stirred the authorities in Brazil to action, and it was resolved to carry out in Rio de Janeiro new measures the object of which would be to destroy mosquitoes and prevent their multiplication; to isolate every case, or suspected case, of yellow fever in hospital, so as to prevent any infection of the stegomyia fasciata, the recognised transmitter of the malady; and, lastly, to protect as far as possible susceptible persons from the bites of that species of mosquito. About the middle of 1903 the new measures were begun. A description of the anti-mosquito campaign, as carried out in Rio de Janeiro from 1903 to the present time, is given in a brochure recently published by La Mission Brésilienne d'Expansion Economique, from the pen of M. Nerêu Rangel Pestana, and entitled, "Comment on Assainit un Pays," the subsidiary title being "L'Extinction de la Fièvre Jaune à Rio de Janeiro." This brochure begins by briefly sketching the past history of yellow fever in Rio de Janeiro since 1849, and showing how it became necessary to remove from Brazil's capital the evil name which it had acquired. Acting on the motto that prevention is better than cure, and being profoundly impressed by the results obtained against yellow fever in Havana, the government passed a law making the notification of the disease compulsory under heavy penalty. Protection of the sick by isolation against the bites of stegomyiæ in specially prepared hospital wards was then enforced and war was waged against mosquitoes For this purpose the city, which has now a population of over 800,000, was divided up into sections in which house-to-house visits were undertaken by a staff of 72 medical men assisted by some senior students; the sick were examined where necessary, the sanitary condition of each house was investigated, and advice given for its improvement. A "mosquito brigade" of 1500 men was formed to seek out the breeding-places of the mosquitoes and to remove any conditions likely to favour the multiplication of these insects. All premises were visited once in six days, receptacles liable to harbour larvæ were carted away, cisterns were screened, pools and puddles were treated with petroleum, houses in which yellow fever had occurred or which were infested by mosquitoes were fumigated to destroy these insects. At the same time great attention was given to the general sanitation of the city. New, wide, and open streets were run through the most congested quarters; embankments were constructed along the foreshores; and to some extent a new city arose on the débris of the old one. As already said, these measures were begun about the middle of 1903, and in that year 584 deaths from yellow fever were recorded. Most of them, however, occurred in the hot season, the first three months of the year, before the new measures had come into operation. In 1904, during which 19,914 immigrants arrived at Rio de Janeiro, the deaths from yellow fever numbered only 48. In 1905, when 23,017 immigrants arrived, the deaths from this disease rose to 283, and of these 251, or 88·7 per cent., were foreigners, most of whom on arrival had found shelter in the worst quarters of the city. Some of the cases, indeed, had not been diagnosed as yellow fever at all and had not been protected in the early stage of the malady from the bites of stegomyiæ, so that it is not surprising that fresh crops of cases developed. In 1906 the efforts were redoubled, and although 27,147 immigrants arrived to swell the susceptible portion of the population, there were only 42 yellow fever deaths certified, 35 of them being foreigners. In this year, 1906, as showing the extent of the anti-mosquito measures carried out, it may be mentioned that 153,670 "foyers" of mosquito larvæ were destroyed, 2546 cartloads of old boots and disused cans capable of holding water were removed from the vicinity of houses, 97,461 litres of petroleum and 26,858 of creolin, 1242 kilogrammes of pyrethrum, and 28,603 of sulphur were used in the work. In 1907 there were only 39 yellow fever deaths, notwithstanding that 31,156 immigrants arrived. During 1908 only four deaths from this cause were reported, although no fewer than 46,216 immigrants reached Rio de Janeiro, and in spite of the fact that the season was a very hot one. In the first quarter of 1909, these three months forming the yellow fever season, not a single death was ascribed to this disease. Notwithstanding this "extinction" of yellow fever at Rio de Janeiro, the sanitary authorities of the city continue to persevere in their efforts. From its geographical position the town is very liable to have the disease imported by shipping from the north or from the south, where areas exist in which yellow fever is constantly appearing. If the efforts were abated it is more than probable that the malady would regain its footing in the lower quarters of the city, and again become epidemic as soon as favourable conditions presented themselves. The annual cost of these special measures is estimated at about 3,000,000 francs; but the beneficial results of this expenditure are not limited to yellow fever alone, for since the institution of the measures there has been considerable improvement in the public health with diminution of the general death-rate. Apart from mosquito work, the weekly house-to-house inspections have brought about much improvement in the sanitary condition of premises in the lower parts of the town, and have done much to educate the most ignorant portion of the population in the elements of domestic hygiene.

THE TRAFFIC IN OLD HORSES.

WE have upon many occasions inveighed against the traffic in old and decrepit horses, which, to the discredit of this country, is carried on from London and sundry ports on the North Sea. The wretched animals are shipped to Dutch and Belgian ports, there to be converted into food for the poorer classes of those countries and possibly for other classes in this country as well, for we do not know the ingredients of all the "delicatessen" on the market. We are glad, therefore, to see that in both Houses of Parliament on the night of July 29th the Government answered questions asked by the Earl of Mayo and Mr. Starkey respectively in a sense very favourable to those who have striven against this shocking traffic. Earl Carrington said that the services of a veterinary inspector had been acquired whose whole time would be devoted to enforcing an Order of the Board of Agriculture and to supervising the work of local authorities. The Board of Agriculture was in earnest, and he was confident that the desired results would be secured. If they were not, Parliament would be asked for further powers. Mr. Gladstone spoke to the same effect in the House of Commons. The traffic is one for which no sort of excuse can be found. What is really needed, it seems to us, is an Order prohibiting the exportation of living worn-out horses though administrative difficulty would be connected with such an enactment. The London magistrates have, by a system of heavy fines and occasional imprisonment, almost stamped out the traffic from the London docks, and if similar action were taken by other magistrates and local authorities in ports such as Hull and Newcastle, similar good results might accrue. Apart from the cruelty of the traffic, it is open to question whether we are justified in aiding the Dutch and the Belgians to sell meat from diseased animals to their fellow countrymen. We shall watch for results of the new regulations with interest, and we earnestly hope that in any future prosecutions the magistrate will fine not only the person who may have been leading the horse, but the responsible seller thereof, and that, too, in the largest sum allowed by law, for the best way to impress the people engaged in this odious traffic is to make it plain that it is not profitable.

DEATH FROM MERCURIAL INJECTIONS.

AT a meeting of the Société des Hôpitaux of Paris on June 18th Professor Gaucher again drew attention to the danger of injections of insoluble preparations of mercury in the treatment of syphilis and reported another fatal case of gangrenous stomatitis, which was due to injections of "grey oil," a preparation of metallic mercury much used in France. This is the tenth case of gangrenous stomatitis so produced which has come under his observation in the last few years. Eight of the cases were fatal, and of the surviving patients one has lost part of his maxilla and the other has not recovered at the end of a year. In addition Professor Gaucher has seen a large number of cases of severe but not gangrenous stomatitis due to the same cause, and knows of other cases which have not been published. Several other cases have been reported in the last few years by French writers and some have been noticed in THE LANCET. In the case now reported the patient was a man, aged 71 years, who was sent to hospital by his medical attendant on Sept. 7th, 1908. In 1905 he contracted a digital chancre, and a papulo-squamous eruption rapidly followed and then double iritis for which he was treated at the Hotel-Dieu. In 1906 gummata appeared on the left arm and rapidly disappeared under injections of grey oil. Encouraged by the good effects of the treatment his medical attendant continued the injections, giving a series of five every six months. During two years the only new symptom was an extensive intestinal hæmorrhage. In July, 1908, deafness and facial paralysis appeared and four more injections were given. Then the patient was confided to another practitioner who gave four injections of cacodylate of mercury. At the beginning of August stomatitis commenced. At first it was slight but the inflammation soon increased in extent and depth. On admission there were abundant salivation and horrible fœtor of the breath. Deglutition was difficult and painful. The left half of the soft palate and tonsil were red and swollen, and covered with a greyish exudation. At the angle of the jaw there were adenitis and periadenitis. The urine did not contain albumin. Examination of the buttocks, even with the aid of radiography, did not reveal any nodules left by the injections. Improvement took place; the exudation disappeared and the inflammation became more circumscribed, leaving only a limited gangrenous area on the left anterior pillar of the fauces and tonsil. But the general condition remained serious, and on Oct. 17th a fulminating hæmorrhage took place from the mouth and the patient died in a few minutes. The necropsy showed that the pharynx and tongue were more involved than had been supposed during life; the epiglottis was superficially affected. The source of the hæmorrhage was an ulcerated artery in the tonsil. The kidneys were congested, their capsules were adherent, and microscopic examination showed interstitial nephritis with necrosis of tubal epithelium. Professor Gaucher condemned the use of injections of grey oil as dangerous, and insisted that they were in no way more efficacious than the administration of mercury by the mouth, by which ordinary cases of syphilis could be perfectly treated. In this country Sir Jonathan Hutchinson has given utterance to similar teaching. He finds the use of mercury in the form of pills so convenient and efficacious that he cannot conceive circumstances which should induce practitioners to take the risks which injections involve. If salivation be caused when mercury is given by the mouth the drug can be stopped and ill consequences usually prevented. But when a supply of mercury has been injected only excision of the part can prevent its continuous absorption. In a case recorded by M. Sicard this was done. At the site of injections in the left buttock was a large swelling which radiography showed contained mercury. The swelling was excised and the patient recovered. But the cases in which this operation is possible are exceptional.

WHITE RICE AS A CAUSATIVE AGENT OF BERI-BERI.

IN THE LANCET of Feb. 13th of this year we published a very interesting preliminary communication, entitled "An Inquiry Concerning the Etiology of Beri-beri," by Dr. Henry Fraser, director of the Federated Malay States Medical Research Institute, and Dr. A. T. Stanton, the bacteriologist of that institution. In that paper an account was given of some carefully planned observations undertaken primarily to determine if, when other factors were excluded or controlled, people fed on "white" rice developed beri-beri; and if, on the other hand, among people under exactly similar conditions, except that "parboiled" rice was eaten, beri-beri did not arise. The full details of these investigations have now been published in No. 10 of the Studies from the Institute of Medical Research, Federated Malay States. From an introductory note we learn that Dr. W. L Braddon, lately State surgeon of Negri Sembilan and a well-known authority on beri-beri, was associated with Dr. Fraser and Dr. Stanton throughout the course of their inquiry. It was, indeed, mainly to test the accuracy of Dr. Braddon's views as to rice being the causative agent of this disease that the investigations were carried out. Dr. Braddon, as perhaps our readers are aware, has for some time been drawing attention to the fact that beri-beri is extremely prevalent in the Malay States among the Chinese population who consume white or "uncured" rice as their staple article of diet; while among the Tamils, who use rice prepared by parboiling, and among the Malays living under primitive conditions, whose chief article of diet is rice prepared from "padi" newly husked, the disease is seldom seen. We do not propose to repeat here the details of the tests which Dr. Fraser and Dr. Stanton applied in the course of their inquiry. They were set out in the preliminary communication published in THE LANCET of Feb. 13th, and commented upon by us in our issues of Feb. 20th and May 8th. We wish, however, to refer briefly to some of the conclusions given in the detailed report now published. Shortly, the experiment, if such it may be termed, showed that out of a party of 220 persons in good health fed on white rice, which they preferred to any other sort, 20 cases of beri-beri developed in the period during which the observations were continued, while out of 273 other healthy persons living under identical conditions, except that they were fed on parboiled rice, no sign of the disease appeared. In addition to the 20 beri-beri cases in the first party, it has to be mentioned that there were other instances of illness also diagnosed as beri-beri but which were not included in the list as the clinical characters of the sickness were not typical. None of these atypical cases, however, occurred among the second party. It was not until white rice had been consumed during a period of 87 days that the first symptoms of beri-beri were observed. It was definitely concluded that the malady was not communicable, and that the evidence was against the suggestion that it could possibly be a "place" disease. The substitution of parboiled rice for the white variety at once caused a cessation of fresh attacks among the party in which the disease had been appearing. It may be observed that although rice was the main article of diet, both parties in addition received daily allowances of dried salt fish, onions, potatoes, cocoanut oil, cocoanut, tea, and salt. Based on analyses, the diet issued to those consuming white rice was calculated to consist of proteids, 91·451 grammes; fats, 43·708 grammes; carbohydrates, 499·165 grammes; salts, 23·064 grammes; carbon, 303·75 grammes; and nitrogen, 14·8 grammes. The diet of those consuming parboiled rice was calculated to consist of proteids, 93·565 grammes; fats, 45·882 grammes; carbohydrates, 492·540 grammes; salts, 24·335 grammes; carbon, 302·34 grammes; and nitrogen, 15 grammes. The outbreak of beri-beri cannot therefore be attributed to deficiency in the diet issued, either in respect of proteids, fats, carbohydrates, or salts. The rices supplied were of uniformly good quality, and were obtained in quantities sufficient for one month at a time. No evidence was obtained to show that any article of food other than white rice was a possible source of a causative agent of the disease. As some persons had suggested that beri-beri was due to the effects of intestinal parasites, especially ankylostomes, examinations were made to ascertain the proportion of the coolies under observation who harboured these worms, but it was found that the percentage of persons harbouring ankylostomes among the sufferers from beri-beri was practically the same as the percentage among the whole of the persons under observation. The conclusion is therefore that ankylostomes play no part in the causation of beri-beri. Upwards of 1000 systematic examinations of blood were made to try to discover the presence of any organism likely to have a causal relationship to the disease, but without positive result. The authors, therefore, repeat their strong opinion that beri-beri as it occurs in the Malay Peninsula has its origin in white rice, or at least has an intimate relation with that article of diet. Samples of the rices employed in the inquiry were taken daily during the period of the experiment and submitted to exhaustive chemical analyses and microscopic examination. This portion of the investigation is still in progress, and we are informed that the results will be published in a subsequent number of the Studies from the Medical Research Institute, and that they will also form the basis for a further investigation which it is proposed to undertake.

THE RE-EDUCATION OF THE WILL IN THE TREATMENT OF DRUG HABITS.

IN the treatment of inebriety and similar drug habits so much attention has been given to the details of institutional care and to the contending claims of the many medicinal agents which are supposed to have remedial virtues that there has been some tendency to lose sight of the fact that the condition to be dealt with is at bottom a disorder of the will, and that it can only be really cured by restoring the patient's power of self-control. Impressed by the practical inconvenience of this neglect of the psychic element in dealing with these cases, Dr. W. Oscar Jennings, whose name is familar to the medical world as a leading authority on the subject of morphinomania, has published an extremely interesting pamphlet on the re-education of the will in the treatment of the morphia habit. Dr. Jennings insists on the fact that psychical treatment is so essential that even the best conceived physiological remedies will fail to do all that they should if they are not seconded by influences that act on the patient's mentality; and he attributes to this cause the want of success which has been met with in treating the morphia crave by alkalines and toni-sedative remedies. This point, which, of course, has to be considered in the treatment of practically all diseases, is naturally of the greatest importance in connexion with disorders where there is a predominant mental element. But it is not merely as affecting the action of medicines that this mental factor has to be taken into account; it has an even more potent influence on the efficacy of treatment by restraint. For, as Dr. Jennings judiciously remarks, when the weaning from any drug habit has been effected, not by re-education and restoration of the will, but by compulsion, this compulsion is very apt to excite a latent hostility which remains as a subconscious fixed idea to revive at some moment of weakness under the guise of a return of craving. This is undoubtedly the reason why restraint fails to produce a lasting cure in many cases of drug addiction, and it shows the extreme importance of accurate psychological study in dealing with patients of this sort. The method of psycho-analysis may, in fact, be as valuable in treating such drug-slaves as Freud has shown it to be in the re-education of the victims of hysteria. In a larger work, to which this pamphlet is designed as an introduction, Dr. Jennings proposes to illustrate by the exhaustive study of a number of cases the way in which this rebuilding of the will can be effected by the intelligent cooperation of the patient and the physician. Meanwhile his suggestive remarks may be a useful reminder to the advocates of compulsory restraint that very often in matters of conduct no less than in matters of thought

> "He that complies against his will,
> Is of his own opinion still."

POISONOUS FISH IN CHINA.

IN the *Archives de Médecine Navale* for July Surgeon-Major Oudard describes a serious outbreak of "alimentary intoxication" which occurred on board the French battleship *Alger* while stationed in Chinese waters. The place where the event happened is not precisely stated, but we gather from the context that it was Shanghai. 70 men in all were almost simultaneously affected, the symptoms being nausea, vomiting, violent colic, diarrhœa, heart weakness, accentuated chilliness followed in a few hours by considerable elevation of temperature, dilatation of pupils, and partial suppression of urine. Only one death took place, the deceased being a young man who had previously suffered from a renal disorder. By a process of exclusion the cause was traced to the ingestion of a fish that was served for dinner at 6 o'clock in the afternoon. The first case came for treatment about 8 o'clock, the remainder following at brief intervals all through the night. Some cases were more severely affected than others, but all were grave, necessitating the employment of powerful remedies, including ether, caffeine, and artificial serum injections. It was the first case that subsequently proved fatal. The man had been transferred to a hospital on shore, and a post-mortem examination was made there at Surgeon-Major Oudard's request. Nothing in particular was found, only "the ordinary lesions of an alimentary intoxication." Portions of the deceased's organs were sent to the municipal laboratory for examination, but the results were negative. The report, which was in English, stated that "no trace of arsenic was found, and careful search failed to reveal the presence of any other metallic poisons." When forming his diagnosis Surgeon-Major Oudard states that he was influenced by the total absence of the cutaneous eruptions which are of such frequent occurrence in poisoning by damaged aliments, as well as by the fact that most of the cases made their appearance between 8 and 11 o'clock—that is to say, while digestion was proceeding actively. According to the Rev. Father Courtois, who was the director of the museum at Zi-Ka-Wei, the incriminated fish was the *Coroina sina* of Cuvier, belonging to the genus *Soiænidæ*, natural order *Aoanthopterygii*. Another authority, the Rev. Father Gaudar, who has been a missionary in China for more than 40 years, informed Surgeon-Major Oudard that the *Corvina sina* is common in the valley of the Yang-tse, where it is known as Hô Toên, which means "the sucking pig of the canal." It abounds in the canals of the region and its flesh is white and tender, hence the name. It is eaten by the lower orders only, who are careful to remove the genital organs and all eggs before they consume it and also to subject it to prolonged cooking. In some specimens of the fish, which Surgeon-Major Oudard procured shortly after his experience of the effects it produces, the genital apparatus was very largely developed.

THE committee of the proposed Home of Recovery for Patients Convalescent after Surgical Operations has received the magnificent donation of £100,000 from Mr. Ernest Frederick Schiff in memory of his brother, the late Mr. Alfred George Schiff, who died last year. It is reported that the committee has already acquired a large modern house, standing in extensive grounds at Oxshott, Surrey, to convert it to the purposes of the home.

WE deeply regret to announce the death of Dr. Arthur Foxwell, physician to the Queen's Hospital, Birmingham, and professor of therapeutics in the University of that city, upon the morning of August 4th, from the results of a cycling accident. We shall publish an account of Dr. Foxwell's career in a later issue.

Dr. A. Newsholme, principal medical officer to the Local Government Board, and Sir Malcolm Morris have been appointed delegates of His Majesty's Government to the International Congress on Leprosy to be held at Bergen from August 16th to 19th.

THE Departmental Committee appointed to inquire into the law relating to coroners and coroners' inquests and into the practice of coroners' courts has issued its first report with minutes of evidence and appendices.

THE library and rooms of the Royal Society of Medicine will be closed during August for cleaning and alterations.

THE QUINCENTENARY OF LEIPSIC UNIVERSITY.

ON July 29th and 30th the University of Leipsic celebrated the 500th anniversary of its foundation. This seat of learning owes its foundation, five centuries ago, to the fierce rivalries in the University of Prague which in 1409 resulted in the German students leaving the Czechish nation in possession of their Bohemian University. Westwards went the voluntary exiles to found a new home on more congenial soil at a centre where already the great cross-roads of early European traffic had made Leipsic a seat of international trade. To-day the stately Augusteum, the Pauliner Kirche, and the vast congeries of scientific institutes that line and flank the Liebigstrasse are the outward and visible signs of that material progress that marks the extraordinary development of academic Leipsic. The fame of Leipsic as a great intellectual and commercial centre, and as the city linked with the names of Leibnitz, Lessing, and Goethe, is world-wide. After divine service in the University church at 9 o'clock on Thursday morning, July 29th, the academic proceedings were opened, under the ægis of King Friedrich August of Saxony, in the New Theatre, with the "Jubel ouverture" of Weber. The wise men, who had come not only from the East but from every point of the compass, paid their tribute of praise and presented their congratulations to the King, in his capacity of Rector Magnificentissimus of the University which on that day celebrated its 500th anniversary. The scene was stately and picturesque. The court and civic and academic authorities were all represented. Nearly 60 universities sent delegates, they came even from China and Japan. The Saxon Government gave a dinner to 1000 guests in the evening. On Friday, July 30th, the events of the day were such as to tax the best energies of the representatives. First an address of over an hour's duration in the University by the aged yet vigorous Professor W. Wundt, known to all students of psychology; then the announcement of honorary degrees, and then an adjournment to see the students' great procession, representing in the form of a stately pageant the history of the University of Leipsic, in which several hundred students in appropriate old-world costumes took part—a long picturesque procession, it took over an hour to pass any one point. Every convenience was arranged for the guests, while Leipsic itself was crowded with sight-seers. A short interval for repose; then came for some a concert in the Gewandhaus and for others classical plays in the theatre. Towards 9 P.M. the inevitable "kommers," when 10,000 students and their guests assembled to greet the King, the professors, and the staff—to smoke, to sing, to listen to speeches, to rehearse the stories and doings of student days long gone by—all to the accompaniment of an endless libation of beer. Toasts and rounds of applause made the rafters of the large and spacious "Festhalle," constructed for the occasion, ring and reverberate again and again until long after the "wee short hour ayont the twal." By night, or rather in the early morning, the streets were festive with jubilant youths in their gay gala costumes. The whole city threw itself into the spirit of the *Jubiläum*, as it is called here, and supported the celebration in a manner at once magnificent and appropriate, and with a prodigal hospitality. Saxony knows full well what it owes to its University, and is proud of the sons of that famous *alma mater* which has flourished on the banks of the Pleisse during half a thousand years.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 6th, 1831.

ACADEMIE DE MEDECINE DE PARIS.

ADJUDICATION OF THE MONTHYON PRIZES.[1]

To M. Courtois, for his discovery of iodine, 6000 francs.

To M. Lugol, for his successful application of *iodine* to the treatment of scrofulous diseases, 6000 francs.

To M. Coindet, for having been the first to use *iodine* in glandular swellings, 4000 francs.

To M. Amussat, for his researches on the *torsion* of arteries, 6000 francs.

To M. Leroy d'Etoilles, for his improvements *on* the lithontritic apparatus, 6000 francs.

Lastly, to M. Felix Hatin, for his invention of an instrument for the ligature of nasal polypi, 1000 francs.

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[1] By a coincidence there appears in the *Times* Literary Supplement of Thursday, July 29th, 1909, the following interesting paragraph under the heading of "Notes on New Foreign Books":—"AUGET DE MONTYON. Par L. GUIMBAUD. Emile-Paul. 7f. 50c. [It was time that a real life should be written of the eighteenth century *bourgeois* who made himself immortal by the foundation of the French Academy prizes which bear his name, and which, if they have not exactly been an incitement to virtue, have made many virtuous people happy. In this matter poor Montyon during his lifetime had to meet with a good deal of ridicule; his notion of recompensing virtue by a prize of money was regarded as absurd by his contemporaries. But the Academy willingly accepted his donation, and *Les Prix Montyon* are to this day very eagerly competed for, and have been the occasion of some of the finest discourses ever uttered under the historic cupola. M. de Montyon's life is well worth reading, especially when one realizes that, born in 1733, he actually lived till 1820, and thus formed a unique link between the old and the new *régime*.]" The name was spelt either Monthyon or Montyon.

ANNUAL REPORT FOR 1908 OF THE METROPOLITAN ASYLUMS BOARD.

WE are indebted to the courtesy of Mr. T. Duncombe Mann, clerk to the Metropolitan Asylums Board, for a copy of this report, which has just been issued. From a preliminary note appears that, although statistical reports had been published by the chairman of the Board at irregular intervals from the year 1871 onward, no regular record of the work of the Board was published before 1886, but that ever since that year a complete report has been issued annually.

The work of the Metropolitan Asylums Board consists very largely of the isolation and hospital treatment of infectious disease, and in this respect it is closely related to the public health work of the Administrative County of London, for the areas dealt with by these authorities are for the most part the same, so that the reports of the Metropolitan Asylums Board may be *considered supplementary to those of the medical* officer of health of the London County Council, and both documents may be consulted together with advantage by those who are interested in the public health and sanitary administration of the metropolis. Although the average daily number of patients under treatment last year was in excess of the average in the previous year by 485, the expenses of the Board showed a decrease of nearly £14,000, as compared with the year 1907. The following table taken from the report, shows the total number of patients admitted to the fever hospitals of the Board during the year 1908, together with the diseases from which they were suffering, and the proportional mortality from the several diseases:—

Diseases	Admissions.	Deaths.	Mortality, per cent.
Scarlet fever	19,629	520	2·56
Diphtheria	5,230	507	9·73
Enteric fever	509	80	16·28
Typhus	2	—	—
Cerebro-spinal meningitis	3	1	40·0
Other diseases	2,594	147	5·68
Total	27,967	1255	—

The managers again congratulate the Board upon the immunity from small-pox which the metropolis has enjoyed throughout the past year, only one case of the disease having been admitted during that period. This patient was a man, aged 36 years, vaccinated in infancy, marks upwards of a square inch in area, four scars less than half foveated; he had not been revaccinated. It is interesting to note that of the 72,691 patients admitted into the small-pox hospitals of the Board from 1870 to 1908 (a period of 38 years) no fewer than 61,806 were received during the five epidemic periods of 1871–73, 1876-78, 1881–82, 1884–85, and 1901–02. Of the remaining 10,885 small-pox patients the years 1879–80 were accountable for 3610 admissions, and the years 1893–94 for 3493, the balance of the cases received during the remaining years ranging from a maximum of 941 in 1895 to a minimum of one in 1908. These figures show that whilst in the first 15 years of the Board's existence the metropolis was visited by small-pox every third or fourth year, in the succeeding 23 years these visitations have only occurred every seventh or eighth year.

The variation in duration of residence of recovered patients at the hospitals of the Board is striking, for it ranges in scarlet fever cases from 60 days at the Eastern Hospital to 72 days at the North-Western Hospital, and in diphtheria cases from 51 days at the Brook Hospital to nearly 72 days at the North-Eastern Hospital. It would be instructive to know the cause of these wide differences, for it is difficult to believe that the type of disease, especially in the case of scarlet fever, has varied so greatly in the same year and in contiguous areas as to require so much longer isolation in the North-Western than in the Eastern Hospital

The report contains important statistics with reference to cases of mistaken diagnosis. In the course of last year 2594 patients, or 9·3 per cent., of the total admissions, were found not to be suffering from the diseases for which they were admitted to hospital. The percentage on the total scarlet fever cases was 6·1, of the total diphtheria cases 22·2, and of enteric fever cases 39·1. Among 1202 cases wrongly certified as scarlet fever there were 97 of measles, 46 of rubella, 280 of tonsillitis, 267 of erythema, and 274 of other, or unrecognisable, disorders. Among the 1159 cases wrongly certified as diphtheria there were 51 of measles, 802 of tonsillitis, and 84 of some other ailment. Among the 199 cases wrongly certified as enteric fever there were nine of influenza, 11 of general tuberculosis, 32 of pneumonia, and six with regard to which no obvious disease could be diagnosed. In the case of small-pox the original medical certificate is revised by a medical officer of the Board at the London wharves. During the year eight persons were certified as suffering from small-pox and were removed to the wharves. The diagnosis was confirmed in one instance only, and the others were returned to their homes.

The Medical Supplement to the report contains particulars of the results of antitoxin treatment of diphtheria during the last four years, as compared with the results obtained before the use of that treatment. From a *diagram there given we learn that whereas in the four years* 1890–93, before the introduction of serum treatment, the average diphtheria mortality in the Board's hospitals was 30·4 per cent.; in the four years 1905–08 the mortality was only from 9 to 10·9 per cent. Several tables are added showing the results of serum treatment at all the hospitals of the Board during the past year, with special reference to the day of the disease on which treatment began. Of 202 cases treated on the first day of the disease there died 3 per cent., whereas there died, of 1076 cases treated on the second day, 6·5 per cent.; of 1182 cases treated on the third day, 10·5 per cent.; of 832 cases treated on the fourth day, 12·7 per cent.; and of 1249 cases treated on the fifth day and later, 14·8 per cent.

In order to increase the limited accommodation for isolating infectious cases at present existing in the Board's hospitals, the "cubicle" or "box" system has been adopted at the South-Western and at the North Eastern Hospitals. Dr. F. Foord Caiger explains that each of the cubicle wards at the South-Western Hospital contains 16 cubicles, which are separated from one another by partitions 7 feet high, of which the upper halves are of glass, the lower halves of silicon plaster. Each cubicle contains one patient only. This system has been found particularly successful in dealing with cases of doubtful character, where newly admitted cases are kept under observation until the nature of the disease has become manifest. Obviously the real test of the value of cubicle isolation is the proportion of patients who develop a second infectious disease while resident in the ward. The medical officers of both these hospitals speak favourably of the system and give particulars of the results obtained. There seems to be satisfactory evidence of the comparative safety of treating scarlet fever patients in cubicles in the same ward with patients suffering from other diseases, provided that care is exercised in carrying out the process The same is true of German measles and also of enteric fever, and statistics are given in proof of these statements.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on July 22nd, Dr. F. H. CHAMPNEYS being in the chair.

A letter, from an approved midwife inquiring as to quarantine to be imposed on pupils coming from hospitals of the Metropolitan Asylums Board was further considered, and a letter from the clerk to the Board on the same subject was also considered.

The Board decided (1) that the reply to the midwife be that in the opinion of the Board safety will not be ensured unless there is (*a*) adequate disinfection before leaving a fever hospital; (*b*) a period of quarantine lasting one week to safeguard patients against incubation of a fever in the nurse. (2) That the clerk be thanked for his letter and informed that the Board notes that, by General Regulation 14 of the Metropolitan Asylums Board's regulations for their nursing staff, nurses leaving service the matron must be [illegible] such nurses has been disinfected.

[illegible] from the Local Government [illegible] opinion as to precautions which [illegible] desires should be adopted by midwives within its jurisdiction in order to guard against the occurrence of ophthalmia neonatorum, and in particular whether the use by the midwife of a weak solution of nitrate of silver is advisable for infants born of mothers suffering at the time of birth from a vaginal discharge. The Board considered that it would not be advisable to order midwives to drop any fluid into the child's eyes as a matter of routine. The Board, having considered the whole question of the precautions to be adopted in order to minimise the risk of the occurrence of inflammation of the eyes in newborn children, decided that the following leaflet be approved, and that, subject to the assent of the Privy Council to the proposed amendments to Rules E 14 and 19, copies be issued to midwives, local supervising authorities, and recognised training schools and teachers :—

[LEAFLET.]

Inflammation of the eyes in newborn children. Ophthalmia neonatorum. This is a very common cause of hopeless blindness, which is one of the greatest misfortunes that can happen to a child. A very large number of children will be saved from blindness if the *following directions of the Central Midwives Board are observed.* It generally arises from purulent discharges from the mother getting into the baby's eyes at birth. It is therefore of "
that this should be prevented: (1) By curing suc
before labour. This requires medical treatmer
as revised). (2) By taking the greatest care that such discharges shall not be carried into the baby's eyes when it opens them for the first time soon after the head is born. The discharges may be carried into the baby's eyes in the following ways: (*a*) The discharges collect round the eyes, especially the eyelashes, and easily get into the eyes. This can be generally prevented if th
hat "as soon as the child's head is born, and if
are opened, its eyelids and the surrounding sk
with clean material such as cotton-wool, lint, or rag, using separate pieces for each eye." The reason for this is that the piece used for wiping the first eye will be polluted by the discharges, and should not be used for the other eye. (*b*) Newborn babies sometimes rub their eyes with their hands. This may rub the discharges into their eyes. As soon as the child is born the hands must therefore be carefully cleansed. (*c*) When the *baby* is bathed the discharges with which its body is covered during labour are washed off into the bath water. If its face is washed in this water, matter may get into the eyes. N.B. The above directions are to be observed in *all* cases, whether purulent discharges are known to be present or not.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on July 29th, Mr. H. T. BUTLIN, the President, being in the chair.

It was resolved to issue diplomas of Membership to 86 successful candidates and, in conjunction with the Royal College of Physicians of London, diplomas in Public Health were issued to 17 successful candidates.

Mr. C. F. Beadles was appointed pathological assistant in the Museum.

On the recommendation of the Museum Committee it was determined to ask Mr. Alban Doran to advise as to the gynæcological specimens in the Museum in connexion with the revision of the pathological catalogue.

A vote of thanks was given to Mr. G. Elliot Smith for his gift of remarkable pathological specimens from Egypt.

On the recommendation of the Committee of Management it was resolved to appoint Mr. R. J. Godlee visitor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

The Council resolved to accept the custody of the Odontological Collection formerly belonging to the Odontological Society, on terms agreed upon between the College and the Royal Society of Medicine.

THE MEDICAL SOCIETY FOR THE STUDY OF SUGGESTIVE THERAPEUTICS.—A meeting of this society was held on July 8th, at 20, Hanover-square, London, W., when a paper was read by Mr. J. Walters of Mossley, Manchester, entitled, "Some Observations on Suggestive Therapeutics in General Practice," which was listened to with great interest, as Mr. Walters was able to record considerable success obtained in the treatment of disease by suggestive therapeutics in a great variety of ailments. A discussion followed which tended to show that treatment by suggestion is making headway amongst medical men of the country. All communications relating to the society should be addressed to the honorary secretary, Mr. C. A. Douglas Bryan, Spa House, Leicester.

Public Health.

ANNUAL REPORTS OF SCHOOL MEDICAL OFFICERS.

The City of Hull.—Dr. James W. Fraser is the senior medical officer to the Hull education committee, the chief officer to the committee being Dr. J. Wright Mason, the medical officer of health, who is also immediately responsible for the sanitary supervision of the schools. For the purposes of actual medical inspection there have been appointed six part-time male and two part-time female school medical officers, whose duty it is to visit each school department assigned to them once a week. The examinations thus made do not include tests for sight or hearing, these being carried out by the senior medical officer. As regards the immediate detection of cases of infectious disease amongst the scholars an arrangement is made by which the local school medical officer is liable to be called in by the teacher on any day before 9.30 A.M., and if the cases suspected by the teachers are found to be suffering from an infectious disease they are at once excluded from the school and the medical officer of health forthwith informed of the fact. The school committee has also appointed a whole-time female school medical officer, who, in addition to acting as a part-time medical officer, has to examine any female teachers and bursary holders who prefer the services of a lady doctor, and she has also to take charge of the girls' industrial school, while the senior medical officer has, *inter alia*, charge of the boys' industrial school and examines the sight and hearing of the children in the elementary schools. The head teachers not only weigh and measure the children, but they also test their eyesight with test glasses; while the school nurse, when notified by the head teachers, visits the homes of children suffering from ringworm, scabies, or other skin diseases, and advises the parents thereon. As regards the height and weight of the children Dr. Fraser states that at every age these were in excess of the average given in the official schedule, while only 1·1 per cent. of the children were returned as badly nourished, 82·5 per cent. being normal or good. 23 per cent. of the children examined had enlarged cervical glands, but in only a few instances was it necessary to draw the parents' attention to the matter. In 2·3 per cent. of the children tuberculous disease was diagnosed or suspected, but in only six cases was any lung trouble discovered. As regards the tuberculous condition of certain organs the following comparative table is instructive :—

—	Number examined.	Pulmonary tubercle.	Suspected pulmonary tubercle.	Other lung diseases.	Tuberculous glands.	Enlarged glands.	Bone or joint disease.
Other towns ...	8858	0·65%	—	3·57%	1·6%	13·8%	0·59%
Hull	6856	0·03%	1·2%	3·9%	0·57%	23·1%	0·16%

Dr. Fraser points out that the proportion of tuberculous cases attending school is very small, and he thinks that the explanation of this fact is that when a child is attacked by tuberculous disease it soon becomes seriously ill and is kept at home. In referring to the question of the children's clothing Dr. Fraser states that the physique of the child is often in inverse ratio to the state of the clothing, which seems to suggest that Dr. J. Kerr's explanation is correct—i.e., that the survivors of the slum children are sturdy, while amongst those whose social circumstances are easier many delicate well-clothed children survive. Dr. Fraser thinks that the good nutritional average is due to the fact that Hull, being the centre of a large agricultural and seafaring population, profits in the physique of her children, there being, too, but few cellar dwellings or back-to-back tenement houses. With reference to the subject of treatment, it is found that the parents take their children to their private or club medical attendant or to the infirmary, children's hospital, or dispensary, and in the matter of spectacles a scheme was instituted by the committee three years ago by means of which spectacles ordered by a private practitioner or at the infirmary or dispensary can be obtained at a cheap rate by small payments made to the head teacher, while as regards scabies the school officer is entitled to issue orders for free sulphur baths. Blind children are boarded out at various blind schools after having been examined by the senior medical officer, and when they reach the age of 16 years they are granted maintenance scholarships which enable them to learn basket-making and the like. There is a degree of thoroughness and directness about this city of the north which is inspiring, and instead of talking about difficulties as regards treatment the committee appears to get over them.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8294 births and 3397 deaths were registered during the week ending July 31st The annual rate of mortality in these towns, which had declined in the seven preceding weeks from 12·6 to 10·6 per 1000, only increased to 10·8 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these towns averaged only 11·2 per 1000, and in London during the same period it did not exceed 10·7. The lowest recorded annual death-rates last week in the 76 towns were 4·5 in East Ham, 4·8 in Burton-on-Trent, 5·2 in Willesden, and 5·7 in King's Norton; the rates in the other towns ranged upwards, however, to 16·0 in Huddersfield, 16·1 in Wigan, 16·6 in Great Yarmouth, and 18·4 in Rotherham. In London the recorded death-rate last week did not exceed 10·3 per 1000, and showed but a slight increase upon the exceptionally low rate in the previous week. The 3397 deaths from all causes in the 76 towns last week showed an increase of but 61 upon the low number in the previous week, and included 315 which were referred to the principal epidemic diseases, against 341, 324, and 313 in the three preceding weeks; of these, 113 resulted from diarrhœa, 80 from measles, 48 from whooping-cough, 41 from diphtheria, 25 from scarlet fever, and eight from "fever" (principally enteric), but not one from small-pox. The 315 deaths from these epidemic diseases last week were equal to an annual rate of 1·0 per 1000, corresponding with the rate in each of the two preceding weeks. No death from any of these epidemic diseases was registered last week in Gateshead, Brighton, Plymouth, Swansea, Northampton, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·7 in Walsall, 4·0 in Newport (Mon.), 4·3 in Warrington, and 5·9 in Stockton-on-Tees. The deaths attributed to diarrhœa in the 76 towns, which had increased in the four preceding weeks from 49 to 90, further rose to 113 in the week under notice, and caused annual death-rates equal to 1·6 in Rotherham, 1·7 in Birkenhead, 2·6 in Bury, and 2·9 in Stockton-on-Tees. The fatal cases of measles, which had been 138, 114, and 95 in the three preceding weeks, further declined to 80 last week, the highest death-rates from this disease being 2·1 in Walsall, 2·9 in Stockton-on-Tees, and 3·3 in Newport (Mon.). The 48 deaths from whooping-cough also showed a further decline from the numbers in recent weeks; the highest death-rate from this disease last week was 1·1 in Huddersfield. The 41 deaths referred to diphtheria, however, exceeded the number in any recent week, and included 22 in London and its suburban districts, four in Liverpool, and two each in Nottingham, Derby, and Bradford. The 25 fatal cases of scarlet fever showed a decline from recent weekly numbers; they included eight in London and its suburban districts, three in Manchester and Salford, and two each in Liverpool, Warrington, and Halifax. The deaths referred to "fever," which had been 22 and 11 in the two preceding weeks, further declined last week to eight, a lower number than in any recent week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 2737 and 2731 on the two preceding Saturdays, had further declined to 2667 on Saturday last; 296 new cases of this disease were admitted to these hospitals during last week, against 415 and 367 in the two preceding weeks. The registered deaths in London last week referred to pneumonia and other diseases of the respiratory organs, which had been 108 and 132 in the two previous weeks, declined again last week to 106, and were 15 below the corrected average number in the corresponding week of the five years 1904-08. Only three deaths in London were directly referred to influenza last week, corresponding with the average. The causes of 33, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered last week were again duly certified in London, Leeds, West Ham, Bradford, Newcastle-on-Tyne, Leicester, Nottingham, and in 52 smaller towns; the 33 uncertified causes of death included six in Liverpool, three in South Shields, and two each in Birmingham, Hull, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS

In eight of the principal Scotch towns 892 births and 423 deaths were registered during the week ending July 31st. The annual rate of mortality in these towns, which had been equal to 12·5 per 1000 in each of the two preceding weeks, further declined to 11·8 in the week under notice. During the first four weeks of the current quarter the death-rate in these Scotch towns averaged 12·4 per 1000; in the 76 large English towns the mean death-rate during the same period did not exceed 11·2. The death-rates last week in these Scotch towns ranged from 10·2 and 10·3 in Paisley and Aberdeen, to 15 2 in Leith and 18·8 in Greenock. The 423 deaths in the eight towns last week showed a further decline of 25 from the numbers returned in recent weeks, and included 39 which were referred to the principal epidemic diseases, against 36, 40, and 45 in the three preceding weeks. These 39 deaths were equal to an annual rate of 1·1 per 1000, against 1·1 and 1·3 in the two preceding weeks; the rate last week from the same epidemic diseases in the 76 large English towns was equal to 1·0 per 1000. Of the 39 deaths last week from these epidemic diseases in the Scotch towns, 15 resulted from whooping-cough, 13 from diarrhœa, four from scarlet fever, three from measles, three from "fever," and one from diphtheria, but not one from small-pox. The fatal cases of whooping-cough, which had been 16 and seven in the two preceding weeks, rose again to 15 last week, of which five occurred in Glasgow, five in Edinburgh, and two both in Leith and Greenock. The 13 deaths attributed to diarrhœa showed a decline of one from the number in the previous week, and included six in Glasgow and two each in Edinburgh and Paisley. The four fatal cases of scarlet fever slightly exceeded recent weekly numbers; two were returned in Glasgow and one each in Edinburgh and Dundee. Of the three fatal cases of measles, fewer by 11 than those in the previous week, two occurred in Edinburgh and one in Paisley. The three deaths referred to "fever" corresponded with the number in the previous week, and included two in Dundee (of which one was a fatal case of typhus), and one in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had declined from 76 to 49 in the four preceding weeks, further fell to 43 in the week under notice, but exceeded by two the number returned in the corresponding week of last year. The deaths in the eight towns last week included 17 which were referred to different forms of violence, of which nine occurred in Glasgow, four in Edinburgh, and two in Dundee. The causes of 20, or 4·7 per cent., of the deaths in the eight towns last week were uncertified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 16·9 and 14·4 per 1000 in the two preceding weeks, rose again to 17·4 in the week ending July 31st. During the first four weeks of the current quarter the death-rate in the city averaged 16 1 per 1000, whereas the mean rate during the same period did not exceed 10·7 in London and 12·9 in Edinburgh. The deaths of Dublin residents from all causes last week showed an increase of 23 upon the number returned in the previous week, and included 15 which were referred to the principal epidemic diseases, against 11 and nine in the two preceding weeks. These 15 deaths were equal to an annual rate of 2 0 per 1000, the death-rate from the same epidemic diseases last week being equal to 0·8 in London and 1 5 in Edinburgh. Of the 15 deaths from these epidemic diseases in Dublin last week, five resulted from diarrhœa, four from measles, four from whooping-cough, and one each from scarlet fever and diphtheria, but not one either from "fever" or small-pox. The five deaths attributed to diarrhœa only exceeded the number in the previous week by one, but the fatal cases both of measles and whooping-cough showed a marked increase. The 133 deaths at all ages included 23 of infants under one year of age and 31 of persons aged upwards of 60 years; the deaths of elderly persons showed an increase. Eight inquest cases and five deaths from violence were registered during the week; and 46, or 34·6 per cent., of the deaths occurred in public institutions. The causes of all but one of the deaths registered in the city last week were duly certified, showing a proportion of but 0·8 per cent.; in London the causes of all the 957 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was equal to 6·5 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: H. W. G. Doyne to the *President*, additional, temporary, and C. L. W. Bunton to the *Carnarvon*, on recommissioning. Staff-Surgeons: M. P. Jones to the *Topaze;* M. C. Langford to the *Devonshire*, on commissioning; M. Cameron to the *Attentive*, on recommissioning; F. J. L. P. McKenna to the *Leander*. Surgeons: J. J. H. Rooney to the *Vivid*, additional, for disposal; C. F. Bainbridge to the *Devonshire*, and A. V. J. Richardson to the *Hampshire*, both on recommissioning; F. G. H. R. Black to the *Carnarvon*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

The following is a list given in the order of seniority of officers on the Indian establishment who will be tour expired during the trooping season of 1909-10:—Lieutenant-Colonels: F. P. Nichols, F. J. Jackson, W. Pike, E. H. L. Lynden-Bell, J. R. Stuart, G. Wilson, W. C. Beevor, S. F. Freyer, J. R. Forrest, H. A. Haines, G. E. Hale, D.S.O., W. T. Swan, C. T. Blackwell, P. C. H. Gordon, H. D. Rowan, H. Cocks, F. W. G. Gordon-Hall, A. Kennedy, H. P. G. Elkington, H. M. Adamson, A. R. Aldridge, D. M. O'Callaghan, R. Holyoake, F. S. Lequesne, V.C., and A. L. F. Bate. Majors: E. A. Burnside, B. J. Inniss, R. C. Thacker, A. J. Luther, H. E. Winter, J. W. Jennings, D.S.O., C. Dalton, C. W. Duggan, T. McDermott, H. W. K. Read, J. B. Anderson, E. S. Clark, K. M. Cameron, M. Boyle, F. Kiddle, J. Grech St. J. B. Killery, G. T. K. Maurice, W. E. Hudleston, and M. McG. Rattray; Captains: C. H. Hopkins, J. G. Berne, G. B. Carter, S. O. Hall, J. H. Brunskill, A. J. Hull, A. B. Smallman, W. F. Ellis, S. M. W. Meadows, T. E. Harty, B. G. Patch, D. P. Watson, J. E. Powell, F. M. M. Ommaney, R. H. MacNicol, S. L. Pallant, C. R. Sylvester-Bradley, J. D. Richmond, M. C. Wetherell, H. C. Hildreth, W. MacD. Macdowall, R. T. Collins, T. J. Wright, A. C. Osburn, F. J. Turner, J. Fairbairn, J. H. Douglass, R. R. Lewis, A. L. Otway, F. H. Noke, W. F. H. Vaughan, R. B. Hole, T. C. Lucas, G. E. Cathcart, W. Wiley, H. Harding, J. A. Turnbull, M. F. Grant, M. D. Ahern, F. J. Garland, A. A. Meaden, S. C. Bowle, and A. S. Arthur.

Lieutenant-Colonel Samuel F. Freyer, C.M.G., retires on retired pay (dated August 4th, 1909). Lieutenant Harry R. Edwards, from the Seconded List, is restored to the establishment (dated July 30th, 1909).

TERRITORIAL FORCE.

Royal Garrison Artillery.

Glamorgan: The undermentioned officers from the 2nd Glamorganshire Royal Garrison Artillery (Volunteers) are appointed to the unit, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Major John Lynn Thomas, C.B., Surgeon-Captain Robert John Richard Cobden Simons, Surgeon-Captain Charles Octavius Parsons.

Royal Army Medical Corps.

6th London Field Ambulance: Henry King Dawson to be Lieutenant (dated July 6th, 1909).

For Attachment to Units other than Medical Units.—Captain William Starbuck Griffith, from the Sanitary Service, to be Captain (dated March 1st, 1909). William Evelyn Alston to be Lieutenant (dated July 1st, 1909). The appointment to a Lieutenancy of William Henry Newton bears date Feb. 21st, 1909.

Attached to Units other than Medical Units.—Lieutenant Alfred L. Low resigns his commission (dated March 31st, 1909). Captain Alexander P. Swanson to be Major (dated Nov. 23rd, 1908). Captain Martin A. Cooke to be Major (dated June 20th, 1908). Ivan Cochrane Keir (late Lieutenant, 4th Battalion, The Duke of Edinburgh's (Wiltshire Regiment)), to be Lieutenant (dated July 1st, 1909).

ROYAL ARMY MEDICAL CORPS EXAMINATIONS.

The following are the successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London, for which 54 candidates entered:—

	Marks.
G. H. Dive, St. Bartholomew's Hospital, M.R.C.S., L.R.C.P. ...	632
L. C. Hayes, Birmingham University, L.R.C.P. Lond., M.B. Birm.	597·5
B. G. Goodwin, Birmingham University, M.R.C.S., L.R.C.P. ...	584
A. S. Cane, Cambridge University and St. Bartholomew's Hospital, M.R.C.S., L.R.C.P.	563
T. H. Dickson, Edinburgh University, M.B., B.Ch. Edin. ...	547
K. Comyn, Cambridge University and King's College Hospital, M.R.C.S., L.R.C.P., B C. Camb.	542
F. R. Laing, Edinburgh University, M.B., B.Ch. Edin.	539
A. G. Jones, Guy's Hospital, M.R.C.S., L.R.C.P., M.B., B.S. Lond.	536
J. M. Weddell, Cambridge University, M.R.C.S., L.R.C.P. ...	535
P. C. Field, Bristol and Guy's Hospital, M.R.C.S., L.R.C.P. ...	528
V. P. Hutchinson, Guy's Hospital, M.R.C.S., L.R.C.P.	518·5
T. W. Stallybrass, Newcastle-on-Tyne, M.B., B.S. Durh. ...	514·5
H. G. Robertson, Glasgow University, M.B, B.Ch.	513·5
R. C. G. M. Kinkead, Queen's College, Galway, M.B., B.Ch. R.U.I.	511
C. M. Nicol, Glasgow University, M.B., B.Ch.	
H. V. Stanley, Trinity College, Dublin, M.B., B.Ch.	
E. C. Stoney, Sir P. H. Dun's Hospital, M.B., B.Ch.	510·5
A. P. O'Connor, Catholic University, M.B., B.Ch. R.U.I. ...	507·5
R. N. Davies, Durham University, M.B., B.S.	506
R. Gale, Glasgow University, M.B., B.Ch.	505

INDIAN MEDICAL SERVICE EXAMINATIONS.

The competitive examination for commissions in the Indian Medical Service was held on July 26th, 27th, 28th, 29th, 30th, and 31st, for which 48 candidates presented themselves for 21 vacancies. The subjects of the examination were medicine and therapeutics, surgery and eye diseases, pathology and bacteriology, surgical anatomy, physiology, midwifery and diseases of women and children, pharmacology, and toxicology. The following is a list of the successful candidates. The aggregate of marks was 5100.

	Marks.
Charles Harold Smith, Liverpool University, M.D., Ch.B., F.R.C S. Eng., L.R.C.P. Lond.	3997
Alan MacDonald Dick, Edinburgh University, M.B., Ch.B., L.R.C.P., M.R.C.S.	3740
Thomas John Carey Evans, University College, Cardiff, and St. Mungo's College, Glasgow, L.R.C.P., M.R.C.S., M.D. Brux.	3733
Robert Inglis Binning, Glasgow University, M.B., Ch.B. ...	3712
Maurice James Holgate, St. Bartholomew's Hospital, M.B., B.S. Lond., L.R.C.P., M.R.C.S.	3512
John McDougall Eckstein, St. Bartholomew's Hospital, L.R.C.P., M.R.C.S.	3503
Trevor Laurence Bomford, St. Bartholomew's Hospital, M.B., B.S. Lond., L.R.C.P., M.R.C.S.	3471
William Andrew Morton Jack, St. Thomas's Hospital, M.B., B.S. Lond., L.R.C.P., M.R.C.S.	3433
Graham Rigby Lynn, St. Bartholomew's Hospital, M.B., B.S. Lond.	3412
Louis Hope Lovat Mackenzie, Cambridge University and St. Thomas's Hospital, M.B., B.C., L.R.C.P., M.R.C.S	3404
Alexander Charles Anderson, St. Thomas's Hospital, L.R.C.P., M.R.C.S.	3385
Duncan Gordon Cooper, Edinburgh University, M.B., Ch.B. ...	3366
William Leonard Forsyth, Glasgow University, M.B., Ch.B. ...	3333
Keshav Sadashiv Thakur, Lahore Medical College and University College Hospital, L M. & S. Punjab	3288
Mohamed Abdur Rahman, Guy's Hospital, L.R.C.P., M.R.C.S.	3281
Framroze Jamsetjee Koleporewalla, Grant Medical College, Bombay, and Guy's Hospital, L.R C.P., M R C.S.	3258
Herbert Robert Burnett Gibson, Edinburgh University, M.B., Ch.B.	3257
David Arthur, Glasgow University, M.B., Ch.B.	3252
Edw[illegible] [illegible]e University and St. [illegible]	3225
Ger[illegible] Hospital, M.B., B.S. [illegible]	3187
Rus[illegible]ty College Hospital, L.M. & S. Bombay, L.R.C.P., M.R.C.S.	3143

A TRIBUTE TO SIR JAMES MCGRIGOR.

As we announced in our last issue the statue of the late Sir James McGrigor, Bart., first Director-General of the Army Medical Department, has been removed from the Chelsea Hospital to the new Royal Army Medical College in Grosvenor-road. The August issue of the *Journal of the Royal*

Army Medical Corps contains an appreciative biography of the late Director-General from the pen of Lieutenant-Colonel M. W. Russell, R.A.M.C., illustrated with a portrait and a reproduction of an imposing obelisk, which was originally erected to the memory of Sir James McGrigor, Bart., in the quadrangle of Marischal College, Aberdeen, but which is now in the Duthie Park, Aberdeen. In the same issue Captain N. E. Harding, R.A.M.C., contributes some extracts from "Miscellanies" of Sir James McGrigor, and there is a list of the subscribers who contributed to the memorial which now adorns the quadrangle between the officers' mess and the commandant's quarters of the Royal Army Medical College. This list is accompanied by an excellent reproduction of the statue.

Correspondence.

"Audi alteram partem."

THE NATURE OF ANGINA PECTORIS.

To the Editor of THE LANCET.

SIR,—Reading in THE LANCET of July 31st the necessarily condensed but interesting *résumé* of Sir T. Clifford Allbutt's remarks in opening the discussion on Angina Pectoris at Belfast causes me to regret that I was prevented at the last moment attending the meeting to take part in the discussion, when I should have had the advantage of hearing the whole statement, which possibly dealt more fully with some of the points I am about to mention. I do not, however, desire to occupy any of your valuable space for a general discussion of the subject, but in order that I may make my own position in the matter more clear, as Sir Clifford Allbutt's courteous reference to my views which you publish scarcely represents them quite accurately. According to your report (p. 337) he there states my conception of the cause of angina pectoris to be a lesion of the "intracardiac ganglia."

In speaking thus Sir Clifford Allbutt doubtless had in view my remarks upon a case of intravascular coronary aneurysm published in THE LANCET (Vol. II., 1902), in the neighbourhood of which there was an intravascular collection of nerve cells in the intima of the vessel—that is to say, in a position, so far as I know, not recognised by anatomists as innervated—and I certainly believe that in this case they might reasonably be regarded as having some relation to the pain evinced. For, while I am aware that physiologists at present regard peripheral visceral ganglia as only motor in function, I contend that our knowledge on this point is insufficient to maintain that this is invariably the case, and the *situation* of the ganglion in question renders it difficult to conceive for it a merely motor or nutritive purpose. But intravisceral or intravascular ganglia, if a source of pain in some cases, are only *one* source of angina, and I can conceive no reason why a certain degree of stimulation of the cardio-vascular nerves in any portion of their course from Sir Clifford Allbutt's "suprasigmoid" area downwards, should not likewise be capable of originating the pain with or without an actual breach of surface. The chief factors in the production of such stimulation may therefore, I would suggest, be the plus or minus action of the cardiac muscle according as it is hypertrophied or degenerated, the impaction of a foreign body in the coronary vessels, which an ante-mortem clot essentially is, or disturbance or lesion of the aorto-cardiac nervous system. The constant character of the process or syndrome is to be attributed to the constant anatomical and physiological nature of the stimulable cardiac nerves.

Apart from the question of the *source of the pain* in angina, I am glad to find myself in accord with Sir Clifford Allbutt in regarding the *cause of death* in such cases to be an inhibition of the cardiac action by that shock to the nervous system which either induces rapid death in diastole, as proved by necropsy, or such a depression of the contractility of the organ (to use a term descriptive of a phenomenon rather than denotative of a vital action) as kills after a longer interval, during which, while death is approaching certainly, pain is usually absent owing to the fall of blood pressure attending a failing heart. In his experience of complete and permanent recovery from what used to be called angina vera and which it is sometimes convenient, if illogical, to use clinically still, Sir Clifford Allbutt has been more fortunate than myself. While I have known the affection to be apparently in abeyance for long periods, my own experience is that angina once established, so as to leave its diagnosis indubitable, death from cardiac failure due to local conditions and with or without pain is the rule—a fact which argues a local source of the affection. But the experience of angina by individual observers differs, and the holding of this discussion in Belfast reminds me that that prince of cardiologists in his day, William Stokes of Dublin, in his memorable work, published in the ripeness of his experience in 1854, states that [illegible] with a case! It is, moreover, [illegible] Registrar-General's reports show [illegible] ways been a disproportionately small, as there is in Scotland a disproportionately large, death-rate from angina pectoris as compared with that occurring from the same cause in England.

I am, Sir, yours faithfully,
ALEXANDER MORISON.

Upper Berkeley street, W., August 1st, 1909.

*** In our report of Sir Clifford Allbutt's remarks at Belfast we referred to his theory as having been first published in part in 1894. This statement was not quite correct. Sir Clifford Allbutt then advanced the same hypothesis in its entirety as he continues to uphold.—ED. L.

A CERTIFICATE OF THE CAUSE OF DEATH FOLLOWED BY AN INQUEST.

To the Editor of THE LANCET.

SIR,—Your correspondent, Dr. Edwin J. Toye, is scarcely justified in his statements in THE LANCET of last week. He there remarks, "As a matter of fact, the medical man has no such discretionary power. It is obligatory upon him to certify the cause of death even if violent." He then gives part of the 20th section, leaving out these words:—

> [illegible] information of the death, deliver [illegible] the cause of death shall be entered [illegible] e name of the certifying medical [illegible]:

It is quite clear that the medical attendant of the deceased person is not required to give a certificate unless the death be from natural causes, and such as the registrar may accept without hesitation and enter upon the register. To give the cause of death as due to violence would be waste of time and trouble. In the 39th section of this same Act the refusal to give a certificate is only enforced when this is done "without reasonable excuse." When there is one the medical attendant has a discretionary power and it is his duty to refuse to certify and to refer the case to the coroner. Moreover, the 3rd subsection of Section 20 runs thus:—

> Where an inquest is held on the body of any deceased person a medical certificate of the cause of death need not be given to the registrar, but the certificate of the finding of the jury forwarded by the coroner shall be sufficient.

When this Act was passed in 1874, coroners acted upon the ancient statute of 1 Edward III., stat. 1, c. 8. This required the coroner to go to the place where any be slain or suddenly dead or wounded, to summon a jury, and to inquire as to the cause of death. Acting upon this coroners claimed the right to hold an inquest in any and every case of sudden death, even though its cause was well known to the relatives and to the medical attendant. The 3rd section of the Coroners Act, 1887, passed just 13 years later than the Act quoted by Dr. Toye, requires the coroner to hold an inquest in every case of violent or unnatural death, or sudden death the cause of which is unknown. There is thus no difficulty in determining when to give and when to refuse a certificate. Should the medical attendant have any doubt, it is clearly his duty to refer the case to the coroner, with whom rests the responsibility of deciding whether there is reasonable cause to suspect that the death is one of those I have named. What is required is to avoid useless inquests involving the attendance of twelve jurors at great inconvenience to themselves. Writing from an experience of 44 years as a witness and looker-on, I have no hesitation in confirming what was stated in your annotation of July 24th. Dr. Coley was perfectly within his right when he gave a certificate of the cause of death of his patient, and the coroner was not justified in holding an inquest without first conferring with Dr. Coley. There is now no "crowner's quest law," but there is the law of the land which governs coroners as well as medical attendants. The whole subject is now prominently before the medical profession and the public, and it is the duty of all members of the profession, individually and collectively, to maintain their rights.

I am, Sir, yours faithfully,

Liverpool, August 2nd, 1908. FRED. W. LOWNDES.

THE MERCURIAL TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I am interested in the article by Dr. J. E. Squire and Mr. J. A. Kilpatrick, on Pulmonary Tuberculosis Treated by Deep Muscular Injection of Mercuric Succinimide, in THE LANCET of July 17th, p. 141. I have been using the injections in similar cases according to Wright's latest technique, which omits the two weeks' course of potassium iodide. I would not give the iodide, as I did not think the results would be as good. I have had to discontinue the injections in nearly every patient because of the acute pain following them in thin subjects and the occurrence of a lump of the size of a walnut at the site of the injection after an injection or two, no matter whose preparation I used. I found that the physical signs improved and the patients felt better under the treatment; one patient felt so well that he did more than he was fit for and sent his temperature up. I am inclined to think that some patients are more sensitive to the reaction of the mercury than others, and that the mercury also has a share in sending the temperature up. The initial effect I found was to reduce the temperature and night sweats. Only one of my cases was sensitive to the mercury, and as he was an ex-pressman he probably did too much. I only used the mercury injections in advanced cases, those which I could not use tuberculin in. I was disappointed at being forced to discontinue the treatment from the causes I have outlined, so have put them all on hydrarg. iodid. viride by the mouth, and later will report my results.—I am, Sir, yours faithfully,

A. J. ANDERSON, M.B., C.M. Edin.

Newport, R.I., U.S.A., July 24th, 1909.

THE DRINKING CHILD.

To the Editor of THE LANCET.

SIR,—Dr. Imre Doczi, the representative of the Hungarian Government at the Twelfth International Congress on Alcoholism, read a paper on Alcohol and its Effects upon the Child. The original paper was written in his native tongue, and was subsequently translated into German and thence into English, with the result that an unfortunate error crept in, and he was made to say in the published abstract that: "As a result of statistics gathered it is found that there are hardly any schools in which there is a pupil who is a total abstainer. On the other hand, it is by no means rare to find schools where there are not pupils who do not have alcohol given to them in some form by their parents." He has requested me to ask you to correct the error and to state that what he intended to convey was that: "Most carefully prepared statistics based upon the data obtained by the Hungarian Government as to the drinking habits of all the children—i.e., about half a million children under the age of 18—in all the schools of all classes, both elementary, private, and public, show that 20 per cent. of the children are total abstainers. It is by no means rare to find schools where pupils are given alcohol daily by their parents. Among the poor Slav population this is given in the form of spirits distilled from grain, or possibly more commonly from potatoes."

The investigation was carried out in a very thorough manner and it was found that 36 per cent. of the pupils who indulge in alcoholic drinks were careless and idle; 11 per cent. dull of comprehension; 13 per cent. incapable of prolonged attention; 10 per cent., during the first hours of the morning (from 8 to 9), gave confused answers; 18 per cent. were very backward in subjects requiring special mental effort; while only 10 per cent. showed no ill-effects. The statistics show, further, that alcohol has a marked influence on mind, character, and bodily health. In only 3 per cent. of the cases had a medical man prescribed alcohol for the child.

These facts may be taken as valuable evidence of the necessity for similar research in England. Some months ago I obtained figures from a few of the London County Council infant schools, and found that, in each, no less than 40 per cent. of the infants under eight years of age drank alcohol more or less regularly. There appears to be no doubt that a similar state of things exists in every part of Christian Europe except in the countries of the farthest north, and it would be interesting to find out whether the figures I obtained from schools chosen haphazard are true of the rest of the country. In one school of some 300 infants I found that 11·8 per cent. drank alcohol daily, 34·1 per cent drank occasionally, and 54 per cent. were "Band of Hope," but I know of one "Band of Hope" child in another school who drinks alcohol daily.

The medical inspectors of school children already have power to obtain this information, and it is to be hoped that during the course of the next few years some such inquiry will be made into the drinking habits of the children in this country. I am, Sir, yours faithfully,

F. G. MACKERETH.

Beulah Hill, Norwood, S.E., July 28th, 1909.

CHILDREN'S COUNTRY HOLIDAYS FUND

To the Editor of THE LANCET.

SIR,—August is with us. All the hoardings display attractive programmes of holiday excursions. But for the vast majority of the child population the beautiful pictures that accompany them conjure up no happy memories of green fields and golden sands. The elementary schools are closed, and they are doomed to spend their month's holiday in the streets or playing in dark courts.

The Children's Country Holidays Fund is trying to help as many of them as possible to realise the meaning of the pictures by aiding them to spend a fortnight's holiday in country cottages. Last year 42,510 were sent away. On July 22nd this year 22,000 went away and are now being entertained right royally by their cottage hosts. Arrangements have been made and homes found for 23,000 more. Only one thing is lacking—the necessary money. At present subscriptions show a falling off of nearly £1000, and at least £8000 are required if none of them are to be disappointed.

May I appeal to your readers who are either holiday-making or preparing for their holiday to give generously, so that the required sum may be promptly made up? The cost is small, the benefit to the child great. 10*s* will pay for the holiday for one child. All contributions, large or small, should be sent to the honorary treasurer, the Earl of Arran, 18, Buckingham-street, Strand, W.C, who will gratefully acknowledge them.

Yours faithfully,

July 30th, 1909. A. F. LONDON.

THE ROUTINE USE, BY THE OPEN METHOD, OF A MIXTURE OF CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—The method adopted by Dr. F. Hewitt and Dr. J. Blumfeld of dismissing all my contentions by disagreeing with the least important struck me as a little too "cavalierly" to be passed over in silence, for the fact that my practice agrees with (so far) uncontroverted theory, while theirs does not, surely entitles my arguments to some further consideration than was shown in their general reply; and I maintain that the routine use of C_2E_3, simple and unmodified, is not sufficiently safe, that it is likely to cause anxiety even to skilled anæsthetics, and that it may be very dangerous in the hands of the practitioner who, giving anæsthetics seldom, will indubitably take Dr. Hewitt's and Dr. Blumfeld's article to mean that in C_2E_3 he has *it*—Panacea.

The use of this mixture as a routine is good because simple, but it has only its simplicity to recommend it, and if safety can be added to simplicity by the "simple complication" of adopting the "open ether" method, what grounds does the rejection of a good working theory give for condemning the improvement in method?

To advocate any method of giving chloroform (to give C_2E_3 *is* to give chloroform) which does not provide for a diminishing dose is in these days a retrogression, and in so far self-condemnatory. And this for two reasons, each becoming almost daily plainer and better understood. These are: (1) the not infrequent occurrence of "status lymphaticus"; and (2) the ever-present danger of delayed chloroform poisoning.

1. It is said that status lymphaticus cannot be recognised ante-mortem. I do not agree. In my experience it never does to give much, if any, chloroform vapour to persons under 30 years of age who (1) have some enlargement of the thyroid gland with fulness of the episternal notch; (2) have a slow pulse with no spring or rebound in it; and (3) are either not apparently nervous or are in a mournfully depressed state. They may seem to be excellent subjects for anæsthetics in every other way, but if they present those signs they are always *the worst*. But there is no particular danger and not much anxiety if the C.E. mixture be limited in quantity and followed by open ether. 2. Delayed chloroform poisoning can (only) be prevented.

I beg leave to endorse Dr. Barton's remarks on the value of C.E.—ethyl chloride—C.E. sequence for rapid (and safe) induction, such value being obvious in the case of children and nervous women, and enhanced by the fact that patients who are caused to "go under" quickly also "come round" quickly—and pleasantly—a point of some importance in private work.

I am, Sir, yours faithfully,

London, S.W., August 3rd, 1909. DONALD J. MUNRO.

AN INDEPENDENT MEDICAL PROFESSION IN INDIA.

To the Editor of THE LANCET.

SIR,—The question of fostering the development of an indigenous medical profession involves two considerations, inter-related indeed, but yet vitally distinct. The first and incomparably the more important is, what ought and what can Government do to promote the growth of a body of medical practitioners trained indeed in Government colleges of medicine but dependent thereafter, not on Government employment, but on private practice amongst their fellow countrymen. The second and much narrower question is to what extent it is possible or desirable to utilise native agency in Government medical work, whether legal, educational, clinical, or research. It is on the solution of the former question that depends the gradual extinction of that farrago of Hippocratic pathology, occultism, and empiricism that constitutes the stock-in-trade of the hakim, the vaid, and the Ojha, and that leads to the vast mass of suffering, loss of health, and premature death which all must deplore who know anything of medical practice in the East. In this matter the policy of Government has been to provide a Western medical education of a higher and lower grade and to establish far and wide charitable dispensaries staffed by native practitioners primarily for the direct relief of suffering amongst the poor but also as an object-lesson to the well-to-do in the benefits of Western medicine. The lesson has been but too well learnt and the effect has unfortunately been the pauperisation by free medical aid of a vast number of the comparatively well-to-do and the direct discouragement of the private practitioner. Our medical diplomates, like those in arts and law, now look for a career almost solely to Government employ. The remedy is difficult to indicate but will probably be found along two main lines, the imposition of some check on abuse of charity together with some restriction of unqualified practice. But whatever be the remedy it cannot be too much emphasised that this is the important and outstanding question—namely, the status and prospects of the private practitioner—and any solution of our second question must be judged mainly by its probable bearing on the first.

Let us turn now to the second question. It is admitted that up to the present the most responsible Government work, whether connected with research, with medical education, or with forensic medicine, has been entrusted to members of the Indian Medical Service. And this is so for reasons which must be held to be to a great extent still valid. For fruitful research the worker must be in close touch with the trend of scientific thought and experiment. At present India is a back-water far removed from the main current of scientific activity. The worker in India therefore must be in close touch with Europe and that in the nature of things the Indian graduate cannot yet be in any sufficient measure. Nor, it must be confessed, is there any evidence as yet of any aptitude in the Indian mind for original research in this realm of thought.

In the same way, until there arises something like a national school of medicine in India, it is necessary that the principal *teaching* should be in the hands of those who are by association and training fitted to be the channel through whom new methods and new views from more advanced centres may find their way into Indian practice. And even a European-trained Indian graduate does not fulfil this condition. More important than original training as a student is often renewed contact with the Western schools. Any attempt unduly to curtail the influence of European teaching in the medical schools of India will inevitably lead to stagnation, if not retrogression. That important medico-legal work should be largely in the hands of Europeans depends on the same cause that leads Government to retain the principal judicial posts largely in the hands of the Civil Service. While cordially admitting the great improvement in knowledge, ability, and honesty of the Indian medical practitioner, as of the native magistrate, we may still maintain that it will be long yet before the average native practitioner, however skilful, can be trusted to be as independent as his European *confrère*.

One reason, perhaps the most important reason, for the existence of the Indian Medical Service in its civil branch is apparently considered unworthy even of mention—namely, to afford medical aid to the European officers of Government and their families. Apart from any statutory right which such civil servants may be able to urge, it is obvious that morally one of the first duties of any civilised Government in a tropical, semi-civilised country is to afford its servants such assistance in sickness as they would be able to command at home—just as the parallel duty is recognised of assisting to provide the ordinances of religion.

It must be remembered that the qualifications of the vast majority of native practitioners are not such as would entitle them to registration in the United Kingdom. Even were their qualifications above reproach, the difference in social customs and manner of life of the two races is such as will always entitle the European civil servant, and more especially his family, to the services of a medical officer of his own class and colour. But what are "the more important civil surgeoncies" to which it is proposed to appoint natives? Precisely those where there are the largest official European communities and in which, whatever the Secretary of State and his advisers may think, their own civil servants will undoubtedly and most justly insist on having a European medical attendant of their own class.

I forbear to dwell on the effect on the service of any attempt to carry these views into effect. But it is sufficiently obvious to anybody who knows anything of the feeling of the service as to the already greatly diminished advantages of civil employ, that if only to the more isolated stations, where social amenities and professional prospects are least and unpaid drudgery greatest, are appointments to be open, there will be the greatest difficulty in filling even this numerically restricted cadre from the ranks of the service. Government would be better advised to devote its attention to the encouragement of the private medical practitioner, on the one hand, and, in the sphere of State medicine, to the crying need of a properly organised native sanitary service. Between the two all the surplusage of Indian-trained graduates may be for many a year to come usefully absorbed. Nor should the rewards and honours in these spheres be beneath the deserts of even the most distinguished.

I am, Sir, yours faithfully,

July 25th. FURLOUGH.

THE TERRITORIAL MEDICAL SERVICE.

(FROM A SPECIAL CORRESPONDENT.)

II.—THE SELECTION OF SITES FOR CAMPS, WATER-SUPPLIES, &C.

BEFORE actually proceeding to a camp of exercise, much useful work can be done by a Territorial medical officer in the nature of making inquiries, either in person or by correspondence, from the local military authorities of the area in which it is proposed to locate his unit for field training. As a general rule the actual site of the camp, if on War Department ground, is selected and allotted to the different units by the local military authorities (G.O.C.), and his staff medical officer (A.M.O.) is responsible for the sanitary administration. Inquiry should be made from the latter, or in his absence from the local medical officer of health, as to the prevalence of infectious diseases in the vicinity of the camp and of the arrangements to be made for treating cases of infectious disease occurring during a training. The writer has known considerable flutter to have arisen in a large Volunteer camp where a case of small-pox occurred, no such inquiry having previously been made. A map of the camp area should also be obtained and definite instructions from the local A.M.O. as to the camp conservancy arrangements, more especially the standard types or plans with full directions for latrines, urinals, sullage water, and grease pits, and whether latrine seats have been provided for officers and N C.O's. The water-supplies of the camp should be inquired into, whether if wells or springs they have been protected from surface pollution and fenced round, the arrangements for providing R.A.M.C. water squads, water- and filter-carts and instructions for cleansing them, also whether it is necessary that the water should be clarified, filtered, or boiled, and the provision of materials (alum, fuel, &c.) for carrying out this. The question of provision of an incinerator for the camp and also proper ablution benches for the men should not be lost sight of. A few days before the departure of the main body to camp the sanitary squad under their N.C.O. should be sent with the advance party. Definite instructions should be issued to this party by the O.C. unit as to the position and number of latrines, urinals, urine pits, sullage, and grease pits to be dug. not forgetting the latrines, &c., for the canteens and institutes. Lastly, the address of the engineer officer (O.C. R.E.) of the camp area should be ascertained, as he is the responsible official for remedying constructional defects, water-supply, drainage, roads, &c. During camp training every attempt should be made by senior medical officers to instruct their juniors in all matters appertaining to the relationship of sanitation and preventive medicine generally to the art of war. In this country the medical profession is very much behindhand in the matter, whereas on the continent the standard literature on the subject is very full. It is understood that the War Office authorities are at present engaged in the preparation of a handbook.

The more military medical officers understand of tactics and strategy the greater will their appreciation be of any given situation and the more will their advice on sanitary matters be recognised by general officers. In peace time any training, medical, sanitary, or otherwise, to be of value must be on the lines that will be followed in actual war, and the question of the selection of grounds for encampments and bivouacs will naturally be one of importance, and one of the greatest possible factors in the prevention of disease among troops on field service will be strict attention to all matters relating to camp hygiene.

An army in the field encamps or bivouacs with the primary object of obtaining rest and food, the degree of enjoyment of which depends on security of repose from the enemy's attack, and also on the quality, quantity, and facility of obtaining food- and water-supplies; and last, but not least, upon the sanitation of the ground occupied and its continuous upkeep.

Rules for Selection of Site.

In time of war the site for a *standing* camp is selected chiefly because it presents certain strategical advantages, and will be, as a rule, found on lines of communication and other places more or less of a permanent nature. The site for a *temporary* camp, on the other hand, is chosen on account of some tactical advantage which the ground may offer, and for this reason the comfort of the troops occupying it may often have to be much more neglected than in the case of standing camps. Nevertheless, the nature of the ground on which men have to sleep should, if possible, always be considered, as if men have to rest on damp or very uneven, stony ground, their rest, and consequently their health, will suffer. Some military leaders, Napoleon for instance, considered bivouacs more healthy than living in tents. Bivouacs, however, have one great disadvantage—namely, the difficulty of the men getting undisturbed sleep. In the selection of a site for a camp or bivouac three main considerations may be said to be involved: (1) Security against attack from the enemy; (2) convenience for roads and water; and (3) sanitation. With the first of these—namely, security—a medical officer has no official responsibility, but when detailed alone or detailed to accompany an advance guard or reconnaissance party, he should bear it in mind when looking out for a likely site. With the second consideration, that of convenience of site, a medical officer has an official advisory interest; and with the third consideration, or that of sanitation, the medical officer is the official of all others who does and should bear the full brunt of responsibility.

In all cases of selection of camps, a medical officer (either the Sanitary Officer, Army Headquarters, when the camp is intended for the main army, or the sanitary officer of a division, if the camp for such is under consideration) should accompany the combatant staff officer sent forward, and an officer of the Royal Engineers should also be present if possible, as some details connected with water-supplies, drainage, or the like, may require his special and individual attention. Such representatives must be regarded as experts, who will examine the proposed site from different points of view according to their own branch of the service, and the opinion of each should be weighed as circumstances allow when the final selection is made. No officer of this committee should be detailed to choose a camp on his own initiative alone, as, assuming each to be an expert in his own particular line, he will be an enthusiast, and enthusiasts may at times be dangerous, being liable to be more or less prejudiced in favour of their own special profession. Selection by a mixed quorum will always be found a wise precautionary measure, from the fact that it will neutralise any such tendency. "When military and sanitary decision in the selection of a camp clash, as they may frequently," says Lord Wolseley, "the point must be settled according to their relative importance in each case. If a great battle is impending everything must give way to strategical or tactical exigencies of the moment, and troops may have to bivouac for many nights in positions that may be objectionable in a purely sanitary point of view. It may, however, be accepted as a general rule that when beyond two days' march of the enemy sanitary conditions are to be accepted first.

The special sanitary officer who aids in the selection of a camp site must take into consideration the following points; he should also be in a position to make a concise written report on each if necessary.

1. Fitness of the site in point of salubrity as to soil and subsoil, shape of ground, nature of cultivation, suggestions as to best form of camp, and precautions necessary for its sanitary conservancy.
2. Water-supplies, their quantity, quality, and precautions necessary for their upkeep, distribution, and protection from pollution.
3. Position of latrines, cook-houses, and refuse trenches.
4. Local supply of provisions and fuel.
5. Roads leading to camp, and means of lateral communications.

Fitness of the site in point of salubrity.—In selecting the site of a camp the following suggestions as to its general salubrity may be considered. One of the most important points to remember is to avoid encamping on ground that has been previously occupied as a camp, if possible, and if this is unavoidable for military reasons, go as far to windward as possible of the old site. Should an army be obliged to occupy a defensive position for any length of time on which an attack is expected to be made, pitch the camp or bivouac in advance of such position, so that when the enemy approach the vicinity clean ground can be retired on if necessary and your adversary is forced to occupy a polluted site for his own camp should he move to attack you. Similarly, when water-supplies come under consideration always camp up-stream and protect your water-supply. Avoid camping near marshes; the banks of running rivers are good. The presence of an abundance of green vegetation generally indicates a damp and more or less unhealthy locality, but such places should be noted and borne in mind in the event of water being scarce, as by digging or boring wells or by sinking Norton's tubes in such places water can probably be obtained. A grass country with sand or gravel as a subsoil, which acts as a natural drain, is the best possible site for a camp; especially is this the case if the ground is level and on the top of a rise or ground gently sloping to the east or south. Sites on granite, metamorphic, clay-slate, and trap-rocks are also good, unless these rock strata be disintegrated, when they are unhealthy; limestone and magnesian limestone sites are also healthy when not marshy, and although the water-supplies are hard they are good. Chalk strata by themselves, when unmixed with marl, are good, and so is the water in their vicinity. When, however, marl and chalk exist together they usually form impermeable strata and the soil is damp and water-logged. Permeable sandstone sites are generally most healthy. Avoid flat country lying below sloping ground, and low-lying meadow land. Land with a clayey or marl subsoil is damp and becomes unbearable in wet weather: the ground becomes a bog; men's feet, blankets, and clothing become wet—so such soil should be avoided. The shade of the trees, either in camp or near at hand, is of great value in sheltering men and animals from the sun; but decaying vegetation, jungle, and forests recently cut down are all dangerous in tropical and malarious countries.

Selection of Water-supplies for a Camp.

Having considered the fitness of the site of a camp in point of salubrity as to the soil and subsoil, and the main features of the ground with reference to its shape and general position, the next point to consider is the facility it affords for obtaining water, wood, and forage. As the subject of water-supplies is of greatest importance it will be considered first. The presence or absence of water will on all campaigns compel a General Officer Commanding to fix the length and direction of his marches and almost dictate the plan of campaign. It was the absence of a proper water-supply that compelled General Buller to give up the hope of relieving Ladysmith after the successful battle of Vaal Krantz. It was on account of the want of a proper water-supply that the Duke of Wellington was compelled to occupy a position at the action of Vimiera which he had to change almost at the moment the French attacked. So a sanitary survey of water-supplies will always be a matter of the greatest importance in war, and in reporting on a water-supply in war time the first factor is "quantity"; if this is sufficient the question of "quality" can be gone into. The permanency of water-supplies when they come from springs or wells is a matter of importance. In a flat country the permanency of a spring is doubtful unless the water is very cold; this will indicate that it comes from deep strata; on the other hand, springs from the foot of hills are, as a rule, permanent. In districts where sandstone strata exist springs are usually permanent, as such strata are subject to the formation of subterranean reservoirs from the action of carbonic acid in the rock. There are usually few springs in chalk districts on account of the porous nature of the soil; below chalk strata springs may exist. In granite and trap districts all forms of small streams are suspicious as to permanency unless they originate in lakes, otherwise they are very variable as to [illegible] is selected it should be [illegible] safe from pollution by the [illegible] on above its water-supply. This is of great importance when a camp is to be occupied for more than one night; if it has unavoidably to be occupied longer construct a drain to intercept any possible pollution between the camp and the water-supply. When it is necessary to search for water by borings they should be made at low levels in a plain, or in places where long rank grass exists or where vegetation is more luxuriant, such as the low levels, at or near the bottom of hills, at the junction of dry or damp water courses of two or more valleys, or where mist rises in the evening, or under cliffs, or under the highest side of a valley. The sanitary officer having selected the water-supplies they should at once be marked with distinguishing flags (and put in charge of water-guards) for drinking, watering animals, bathing, and washing; a red flag should denote water for drinking, a red-and-black for watering, and a black flag for bathing and washing. If the supply is derived from a running stream [illegible] to prevent men from washing [illegible] above the drinking-water [illegible] he flags should at once mark out the water; above the first or red flag the water for drinking and cooking to be drawn; between the red and the red-and-black flags horses and cattle to be watered; between the black-and-red and black flags bathing; and below the black flag washing of clothes. When drinking water has to be obtained from a river with high banks, buckets should not be used, but a light hand pump with a hose. The hose should have a strainer attached to the end of the suction pump; the water can then be pumped into tarpaulin sheet baths, and mud, if present, allowed to settle. On no account should men be allowed to dip their water-bottles in such water-supplies, as they only stir up the mud; they should be made to draw it from water carts which can be filled from the tarpaulin by means of a hand pump. When water has to be taken from a pool the same system ought to be adopted, and when it has to be taken from a broad dry river bed small wells should be dug a few feet from the edge into which the water will filter through the sand. The water can be taken from these by pumps; by this means the main supply is untouched and not disturbed.

In standing camps the approach to the intake from a river or stream should be roughly paved and the surface in its vicinity cleared of bushes and rank vegetation. The stream should, if necessary, be slightly deepened at the intake and all weeds removed. If required, a small dam should be thrown across the river just below the intake. If several pools or wells are used, drinking water wells should be selected at a higher level than watering, and watering at a higher level than washing or bathing. Neither surface nor subsoil pollution should be permitted in any place where it is likely to pollute the drinking water. For this reason water for washing purposes is to be pumped off by a light hand-pump and hose or, failing this, drawn in buckets and used some distance away at a place indicated by a black-and-white flag. When bathing is indulged in men are not to use soap, and when clothes are washed they are to be washed at the black-and-white flag. This is an arrangement of the first importance both for health and comfort, and when a position is to be occupied for any length of time these regulations are of still greater moment.

If the water-supply is from springs, small reservoirs should be made to catch and hold the supply that runs off during the night, so that every gallon of water may be available; or barrels may be sunk with gutters connecting each to receive the overflow as each is filled. A small well with a limited supply can be improvised by sinking a barrel perforated all round with half-inch holes; from this the water can be easily drawn. The surroundings of this well should first be thoroughly freed and cleansed of all vegetation, dead leaves, and débris; a clear area of at least 20 yards' radius should be railed off to prevent contamination, and no troops or animals should be allowed in the vicinity. All water from such wells ought to be drawn in clean metal buckets, or better still, it should be pumped by a light hand pump with a protected suction hose into a tarpaulin bath sheet, and again from this into water carts. In the selection of wells the water should be analysed if possible, and the inhabitants living in the vicinity closely questioned as to its pureness and permanency. Wells that dry up in the hot weather months should be rejected in favour of permanent ones; preference should also be given to wells that are in a good state of repair and not overhung by bushes or rank vegetation; their position as regards freshly manured fields and villages must also be considered. In standing camps wells should be thoroughly cleaned out and as much water as possible drawn off before being taken into use, and water should never be drawn except by pump or metal bucket. The surface ground in the immediate vicinity of a well should be drained to carry away all water spilled.

No water should be judged from chemical or bacteriological tests alone; it is also necessary to see its source and course and also use common sense. If chemical tests are not available, next to smell, taste, and ordinary common sense, a fair estimation can be made of water in a well by attention to the following points:—The construction of the well, the source of water and its depth, its immediate surroundings, and its relation to obvious pollution. The meteorological conditions prevailing when the water is examined must be remembered, and it must be ascertained if any specific water-borne disease is supposed to exist in the locality.

When a large pond, tank, or reservoir has to be used for drinking purposes as well as watering animals and where pumps are not available, the supply for drinking purposes should be obtained as far away as possible from the places where the animals are watered or washing done. Animals should water from the shallow side of a pond and a pump should also be connected here, if possible, leading to a trough for washing purposes. Water for drinking should be drawn from the deepest part and be pumped out if possible. In all cases sentries must be posted over the water-supply, and it should be laid down as a rule that the captain and subaltern of the day on duty for each battalion must visit during their tour of duty the sources from which the water is supplied to their men and see that no irregularities take place there. It is also advisable that the field officer on duty and the orderly medical officer of the day pay surprise visits to see that the conservancy of these water-supplies is being maintained, and an officer should accompany all watering parties. In arranging the common water-supply of a camp, where there are several divisions, an understanding must be arrived at by the staff officers of each division as to the guards to be mounted daily over the water and the regulations to be enforced.

Drinking water should, if possible, only be taken from sources which are above suspicion. If such sources are not available we must of necessity attempt purification by means of filters or boiling. The simplest, most suitable, and most certain means is boiling. Permanganate of potash is useless unless employed in very large quantities. Sterilising tablets are not suitable for the British soldier. Bisulphate of soda is generally unserviceable, but for short, *forced* marches not exceeding three days it should prove valuable; after a few days' use it acts as a purge. Ozone as a purification agent acts very well and will possibly be the steriliser of the future; it is, however, expensive to generate. For troops on service the following line of water prophylaxis seemed to be indicated from our experience in recent wars: (1) Griffiths or Forbes Waterhouse sterilisers for troops in standing camps; (2) candle filters with preliminary strainers carefully protected by packing in baskets and carried on trained mules for troops on the line of march; and (3) bisulphate of soda tablets for forced marches of not more than three days. Whether sterilisation be employed or not, as soon as time and labour are available all water-sources should be improved and new ones of irreproachable character selected and established.

In calculating the amount of water necessary per man for drinking and cooking, six pints should be the minimum allowance in temperate, and eight pints in tropical, countries per diem. The maximum quantity required for all purposes will not exceed five gallons per head except in hospitals, where eight ought to be allowed. The following is the daily allowance for animals: elephants, 25 gallons; camels, 10 gallons (these animals are not regular drinkers); horses, oxen, mules, and ponies, five gallons each. (Horses, oxen, mules, and ponies drink one and a half gallons at a time and take at least three minutes to drink every time they are watered.) In calculating water in bulk it may be useful to remember one cubic foot of water contains six gallons. The transport for carrying water is very great and also very costly when it has to be brought for any distance. During the military operations at Suakin 13,000 gallons of water required 700 camels to accompany the force that went to Hasheen. During the operations in Natal all the water required at Frere had to be moved by train in railway water-tanks from down country, and at the battle of Colenso these water-trucks supplied the troops with water on the field of battle. In the Soudan campaign, at the advance depôt and at the base, the iron tanks used for holding water on board ship were used. A sanitary committee assembled at Cairo during this war, considering the various patterns of water-carrying appliances, gave it as their opinion that iron tanks were at all times preferable to wooden ones for either storage or transport of water, and recommended their use for the Suakin expedition.

Filters.—No existing type of filter suitable for field service appears to be free from the danger of becoming a focus of infection; most of the filters tried in the field in recent years are all too liable to choke with mud and become too slow in delivery, others are too complicated in their mechanism, easily injured in transport wagons, and require time to set up and work. When they arrive in camp they are generally too late for the companies that should march out on night picket before the wagons get in. The filters used by troops, British and continental, for the last few years have all been of the candle type, such as the Pasteur-Chamberland, Mallie, and Berkefeld, all of which can efficiently sterilise water in standing camps and with troops under conditions of peace, but, generally speaking, have not proved satisfactory in the field when used with a *moving* field army, as breakage or cracking of the candles so often occurred. The candles are also very prone to loosen at their attachment and leakage then occurs, allowing unfiltered water to pass through and mix with the filtered. Another objection to such filters is the frequent necessity to clean them, as the filtering medium, the candle, gets clogged and water will not pass through until it is brushed, and brushing and sterilising bougies not only wear them out but cause minute cracks which impair their germ-stopping properties. Filters which require daily sterilisation are impracticable for motile columns on field service. Berkefeld filters were supplied extensively to the South African Field Force in the late war, and proved most efficient when carefully husbanded by intelligent workers who understood what their purpose was intended for, and who clarified water with alum preparatory to filtration, thus avoiding clogging with mud; but it is only in places like standing camps, hospitals, or officers' messes that the instructions, as laid down in the directions that accompanied each filter, were carried out, and even in such places constant supervision was necessary. The Berkefeld filter is much more rapid in its delivery, but is not so durable as either the Mallie or Pasteur-Chamberland, neither is it so efficient, as the porosity of the candles is greater. In multiple bougie filters, where more than one candle is used, experience has proved that they are very unreliable, as breakage, cracks, or flaws of one or more candles are of so frequent occurrence that the probability of leakage is always present, so that the purity of the water has to be frequently tested by bacteriological examinations, which are often impossible on field service. We may sum up the disadvantages of all bougie or candle filters as follows: (1) their delivery is too slow, and this is especially the case when the water is foul and the pressure feeble; (2) the output diminishes in proportion to the length of time the candle is in use, and the filter requires frequent cleaning; (3) the cleaning requires to be carried out by a skilled attendant, using considerable care on account of the fragility of the candles; (4) as it is difficult to notice breakages or cracks which may occur during cleaning and which completely neutralise the good effects of the filter much illusory security exists; (5) these filters are not a success on field service, when they require to be frequently taken to pieces for transport; on the line of march their fittings get loose, and this danger is increased when they have to be entrusted to careless and clumsy hands. Soldiers, in order to get water more quickly, may break the candles to let it run through, and the writer has known instances where the candles were deliberately removed and the water pumped through the outer case for appearances' sake. Recently the French War Department have made exhaustive trials in barracks of the Pasteur-Chamberland filter with André's cleaning apparatus attached with favourable results, but this does not appear applicable for field service on account of the weight and fragility. This apparatus facilitates the use of the filter by removing the risk of breaking the candles and allows cleaning to be entrusted to inexperienced hands, so that the wear and tear is almost *nil*, even after two years' work. André's apparatus is said to increase the output of the candles when the filter is working under pressure, although the original water may contain more than an average amount of impurities. The candles are cleaned by an india-rubber comb worked by a crank, and jets of water play on the candles at the same time. These combs in turn touch every portion of the surface of the candles, and cinder and fine charcoal dust is put in to render the cleaning more certain. Charcoal dust is also put into the filter after cleaning and before refilling it with water. The minute particles of charcoal envelop each candle and form a shield, keeping gelatinous deposits away from the pores of the candles. The most suitable powders are those of Kieselguhr, or ground charcoal refuse.

It is, however, very desirable that officers should have some ideas, before starting a campaign, as to improvised filters, or rather water-strainers, and the means of making them, by converting barrels, oil cans, biscuit tins, and various other utensils into filters, and also the means of improvising and turning to account all kinds of contrivances to suit various purposes. In standing camps, improvised strainers have been made in many ways, of which the following may be mentioned:—1. In the case of muddy pools, wells were sunk at a short distance from the water-supplies and the soil was made to act as a natural filter. 2. Clean, empty beer barrels were sawn in half and a hole a foot square was cut out of their bottoms, and fine cloth, linen, and khaki in several layers were stretched over the aperture. This acted as an excellent strainer for mud. This tub-strainer was placed over another complete barrel, which received the strained water, and this, when finally drawn off by a tap below, came out clear. A lump of alum rubbed round the inside of the barrel when full of water for a few seconds (if the water is very muddy) will hasten the deposit of sediment and will not affect the taste of the water. If desired the water can next be filtered through a Berkefeld filter, through which it will now easily run, and, finally, it may be boiled, as filtration does not do away with the necessity of boiling. If strictly carried out boiling will prevent water being a source of enteric fever and dysentery. Swamp water, or water containing vegetable débris, which gives it a rusty tinge, should always be boiled. Dysentery is especially prone to be produced by it in the tropics—for instance, Burma. Much of the water in Baluchistan and Central Asia is so impregnated with salts as to cause severe diarrhœa. A salty-tasting water favours the growth of cholera germs and must be looked on with suspicion.

Mud never at any time is a favourable adjunct to the food of man and acting as an irritant to the intestinal tract produces an acute gastro-intestinal inflammation, which inevitably results in diarrhœa. Acute gastro-intestinal inflammation easily tends to become chronic; this is especially manifested and aggravated on service when troops are fed on preserved field rations and biscuits. When the [illegible]tion is most grave. From [illegible] r emaciates and becomes [illegible] the mucous membrane of the intestines is such that a suitable nidus is presented to the germs of enteric fever or dysentery should they be present in any further water drunk.

(To be continued.)

QUACKERY AND SECRET REMEDIES IN SWEDEN.

(BY AN OCCASIONAL CORRESPONDENT.)

SWEDEN to-day is a happy hunting ground for quacks whose main grievance must surely be this, that their "profession" is overcrowded. The yearly increasing number of foreign patent medicines with which the country is deluged has led the chemists and medical profession to join hands in agitating for reforms the character of which was discussed in the Swedish Medical Society early this year.

Legislation alone is worse than useless. There are still laws on the statute books which, though unrepealed, are of historical interest only. As early as 1688 the status of both physician and apothecary was clearly defined, and their rights were jealously guarded. Quackery and the sale of secret remedies were as the sin of witchcraft for which the offender had to pay the then ruinous sum of 50 dalers. This fine was equally divided between the College of Medicine and the poor. Repetition of the offence meant a 100 dalers fine plus "exemplary punishment." What this punishment consisted of is not stated: that it erred on the side of leniency is highly improbable considering the spirit of the age. A more recent law enacts that the illegal dealer in medicines dangerous to the life or health of man shall be punished with hard labour lasting from two to ten years. In the eighteenth century an attempt was made to combat the evils of secret remedies by buying and publishing the secret of the inventor. The purchase-money was supplied by the State or the College of Medicine, which must often have made a very poor bargain. A remedy for dysentery proved to consist of rhubarb, nutmeg, and wax; after swallowing this compound the patient was given barley gruel and melted wax. A cure for ague was found to contain cobwebs, rhubarb, and the bark of alder and aspen. The princely sum of £3000 was paid by the State only for the right to import a cancer "cure" which appears to have contained sulphur, arsenic, and powdered ranunculus flammula. This compound was applied to the "cancer" in dry form or mixed with yolk of egg. Patenting of medicines had assumed such proportions in 1856 that a law was passed prohibiting the practice. By registering the name of his "cure" the inventor not only evaded this law but also became entitled to the profits of his invention for ever, whereas on the expiration of a patent, the price of the invention could no longer be arbitrarily fixed. Registration of the name of any preparation was refused when its source, nature, and use were common property. Since 1908, however, this restriction has been removed on international grounds, and the inventor may now register even the names of preparations which are notoriously fraudulent. In face of penalties, drastic enough on paper, the modern quack sells for 10 marks his 88 grammes of cigar ash as a cure for dropsy, for 9.50 marks 4 grammes of boracic acid are dispensed as "philosophic gold salt," and for Kr.8.75 a small quantity of vaseline and tinc. cantharidis is sold as a hair-grower to the bald and beardless. The vendor of this last remedy, however, ran foul of the law in Denmark, where he was forcibly detained. About 1400 letters, value from £200 to £300, were addressed to him at this period.

Under the leadership of Professor Mörner the "Bureau for Information about Medical Advertisements" was started in 1903. This institution, which is subsidised by the Society of Apothecaries, aims at providing the public with gratis trustworthy information as to the composition, action, and real value of advertised remedies. From time to time it publishes the results of its investigations in pamphlet form under the heading, "About Fraudulent Medical Remedies and Methods." A systematic watch is kept over advertisements of secret remedies, which are collected by hundreds and analysed. The bureau is aided by a section of the press in exposing the worst frauds to the public. It is also in touch with similar foreign institutions, the publications of which are collected for reference. The bureau has recently exposed a quack by name Olsen, who spelt his name backwards, and did a roaring trade in "Sequa's rheumatic ointment," the chief constituent of which was vaseline. A portrait of "Dr. Sequa" on the wrapper proved on investigation to be really that of a well-known author. Illustrations of "Dr." Neslo's chemical laboratory were taken from photos of the [illegible] happy slip a number of [illegible] to Neslo's chemical la[illegible] chemical laboratory, which responded by sending out the bureau's pamphlet. Olsen has now abandoned the treat[illegible]is, consisting of [illegible]e embarrassing [illegible]he truth about [illegible] consisted of a "Kr.3 50 a bottle" cure for phthisis styled "Woodjuice." This was composed of 99·85 per cent. water and 0·15 per cent. wax, resin, &c. The bureau stated that the most valuable constituent of the "cure" was the empty bottle.

The exposure of a quack remedy is repeatedly followed by the remedy's reappearance in another and more potent form, but if the cooperation of pharmacists is forthcoming the evils of the traffic in fraudulent cures can be at any rate moderated. An enterprising pharmaceutical chemist has devised the plan of dispensing drugs in a wrapper on which some of the bureau's exposures of frauds are printed. The latest edition of these wrappers for distribution by chemists appeared in an [illegible] The bureau's assistance is some[illegible] journals when these are in doubt [illegible]ccepting certain advertisements.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Meeting of the British Medical Association.

THE seventy-seventh annual meeting of the British Medical Association made Belfast a veritable centre of medical talent during the last week in July. The meeting was a thoroughly successful one both from a scientific and social point of view, and there is no doubt that the State visit to it of the Lord Lieutenant of Ireland and Lady Aberdeen gave the meeting an additional *éclat*.

University of Belfast.

To provide for the expected larger demands upon its resources next session the Senate has sanctioned the expenditure of £1500 on the provision of better equipment for the departments of physiology and pathology, pathological laboratory, physics, chemistry, zoology, archæology, anatomy, botany, and geology. A notice has been issued to graduates of the Royal University of Ireland who are entitled under the Act to join the Queen's University, and an application form for this purpose has now been sanctioned by the Senate and will be sent to any such graduate by the registrar on application. The University contingent of the Officers' Training Corps goes into camp at Ballykinlar on the 31st inst. for a fortnight's training. The Commander-in-Chief in Ireland (Sir Neville Lyttelton, G.C.B.) has expressed his intention of himself making the annual inspection of the corps during their stay in camp.

Vice-Regal Visit to Lurgan.

On Saturday, July 31st, after concluding their visit to Belfast, the Lord Lieutenant and Lady Aberdeen travelled to Lurgan, where the former opened a new park and the latter received in audience the ladies of the Lurgan branch of the Women's National Health Association of Ireland, who presented an address.

Action against Medical Practitioners.

At the recent Belfast Assizes, before the Hon. Mr. Justice Dodd, a smith's finisher sued Mr. John S. Bryars and Mr. Charles A. Mateer (both of Belfast) to recover £1000 damages for personal injuries alleged to have been caused by the negligence and want of skill of the defendants. It appeared that as medical attendant to the Smiths' Society, Mr. Bryars had been called to the plaintiff in May, 1907, and came to the conclusion that he was suffering from a bruise of the left hip due to a fall off a bicycle. Mr. Mateer saw the plaintiff in June of the same year, three weeks after the accident, and came to the same conclusion. Finally, the plaintiff went into the Royal Victoria Hospital, where a radiogram was secured, which, however, showed nothing in the way of fracture. Mr. R. Campbell (who saw the case at the hospital with Mr. Mateer) came to the conclusion that there was a subperiosteal fracture, which was very rare. Mr. T. S. Kirk, thinking there was a fracture, laid the bone open, but found the fragments perfectly in apposition but ununited. He cut away the loose bone, the effect of which was to shorten the leg still further, but it had removed the pain and, in his evidence, Mr. Kirk said that the man would be able to go about his work, though crippled in his walk. The treatment adopted by the medical men previously in attendance did not, in Mr. Kirk's opinion, prevent the union of the bones. The judge said that a mere mistake was not evidence of incompetence on the part of a practitioner. The jury returned a verdict in favour of the defendants and the judge expressed approval of their decision.

August 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Memorial to Professor Paul Brouardel.

ON July 20th a bust of the late Professor Brouardel, who also held the position of dean, was unveiled in the *cour d'honneur* of the Paris Faculty of Medicine. The bust, which is a striking likeness of its original, is a fine work of art in white marble and stands against the wall of the small amphitheatre on one side of the entrance. M. Doumergue, Minister of Public Instruction, took the principal part in the ceremony and there was a very large attendance, including the widowed Madame Paul Brouardel, who sat facing the official dais. Addresses were delivered by M. Thoinot, M. Landouzy, M. Liard, M. Guyon, M. Roux, M. Lereboullet, and lastly, by the Minister. The bust has been executed by Denys Puech; it stands on a tall pedestal ornamented with a design that has become classical—namely, two allegorical figures, one of which holds a wreath of roses.

The Prevention of Eruptions after Subcutaneous Injection of Serum.

At a meeting of the Society of Biology held on July 17th M. Netter said that the giving of chloride of calcium by the mouth for three successive days after the injection of antidiphtheritic serum had a notable effect in diminishing the appearance of troublesome eruptions. In collecting the results of three series of observations he found that among 600 patients who had taken chloride of calcium there were 18 cases in which an eruption followed, or 3 per cent., whereas among 648 patients who had not taken chloride of calcium there were 109 cases in which an eruption followed, or 16·8 per cent. He gave chloride of calcium in doses of 1 gramme per day and continued the administration for three days and even longer if several injections have been performed. In case of necessity it might be given in an enema. The efficacy of the chloride of calcium was much less marked in the case of patients who had received intraspinal injections of anti-meningococcic serum, even though the doses of the chloride were larger than usual and the administration continued for several successive days. The penetration of the tissues by the serum when given intraspinally was no doubt exceptionally rapid and copious.

Pneumonic Plague.

At a meeting of the Academy of Medicine held on July 20th Professor Chantemesse read for Dr. de Brun of Beyrouth a paper on cases of pneumonic plague observed by him in that city. He gave a very complete analysis of the earliest symptoms of this form of plague, these symptoms being almost always of very sudden onset and not presenting the initial rigor. After describing the course of the illness he said that the majority of the patients exhibited agonising terror due to consciousness of their approaching end. Death took place from the third to the fourth day and was accompanied by symptoms of asphyxia which depended more on decomposition of the blood than on changes produced in the lungs and heart. It was quite certain that the bronchopulmonary lesions played no more than a subsidiary part in the symptomatology of the disease and did not account for either its extremely sudden invasion or the phenomena of the fatal termination. In their clinical development these lesions, whether insignificant or urgent, whether slight bronchitis on the one hand or broncho-pneumonia on the other, were uniformly associated with septicæmia—a circumstance which explained the cyanosis observed during the first hours of the illness in patients not yet exhibiting any organic cardiac or pulmonary complication; it also explained the agonising dyspnœa *sine materia*, the intense and early alteration of the features, and the intestinal hæmorrhage. All the symptomatology of the disease unmistakeably indicated the existence of septicæmia, and the bacteriological investigations of Dr. de Brun confirmed this hypothesis by demonstrating the presence of the microbes of plague in the blood as well as by the positive results of cultivation in bouillon and on agar-agar. It might therefore be said that the pneumonic form of plague was in fact a specially septicæmic form, characterised from the clinical point of view by the coexistence of variable pulmonary and bronchial lesions. This view seems to cast a new light on the disease and to suggest ideas which might be turned to useful account in diagnosis.

Treatment of Acromio-clavicular Dislocations.

Discussing the subject of acromio-clavicular dislocations at a meeting of the Surgical Society held on July 21st M. Delbet said that these displacements might assume two forms—namely, either subluxation or complete luxation. In the former case the coraco-clavicular ligaments were intact and the movements of the arm were but little interfered with, whereas in the second case the ligaments were ruptured, with well-marked loss of power as the result. In these circumstances some surgeons have sutured the ligaments, but without much success. M. Delbet tried replacing the ruptured ligaments by silver wires. These, however, broke asunder, and he then used silk threads, which were found to answer very well up to the time of the patient taking his discharge, after which the case was lost sight of.

Vegetable Cookery.

One of the ways of cooking vegetables formed the subject of a communication made by M. Maurel and M. Carcassagne at a meeting of the Biological Society held on July 10th. In this particular method, called *blanchiment des légumes*, the first water was thrown away after the vegetables had been boiled for 35 minutes, the natural consequence being an important loss of mineral constituents. Experiments made by these two observers with several kinds of vegetables, including cabbage, celery, asparagus, and beans, showed that on an average their total saline constituents were diminished by 36 per cent. and their potassium constituent by 50 per cent. after *blanchiment* continued for 30 minutes. As vegetables prepared in this way seemed to be easy of digestion, especially by dyspeptics, the process might be advantageous, especially in cooking for vegetarians.

Occurrence of the Mongolian Blue Patch in a European Infant.

At a meeting of the Société Médicale des Hôpitaux held on July 16th M. Apert showed a suckling infant which had on the lower part of its back a large bluish patch, the colour being deepest at the level of the upper limit of the intergluteal groove, and gradually fading where the patch extended over the lumbar region and flanks. He said that 90 per cent. of the new-born children of the yellow race had a patch of exactly the same kind, and for this reason it had been called the Mongolian patch. It also occurred in new-born negro children, but in them it was very soon masked by the natural black pigment. It was, moreover, a regular characteristic of young chimpanzees, orang-outangs, and many lower simiæ. This patch had been very rarely seen in children of apparently pure European extraction. It was doubtful whether its appearance in such circumstances indicated retrogression in racial type or ancestral crossing with an individual belonging to a coloured race at a period sufficiently remote for it to have been forgotten. In the present case the parents of the child had no knowledge of such an incident. The mother was dark-complexioned (*brune*), but not to an extreme degree; the father's hair was of a deep chestnut colour (*chatain foncé*); the infant was very dark-complexioned and had patches of black pigment on his ocular conjunctivæ. The mother said that an elder brother, now deceased, showed a similar mark.

Reform of Pharmaceutical Studies.

The Superior Council of Public Instruction has been considering the reform of the curriculum of pharmaceutical students. The studies necessary for the diploma extend over five years, of which the first is probationary and is spent in a [illegible] preliminary examination. During the four years of the regular course students must keep 16 quarterly terms, and pass three preliminary and three final examinations. The new regulations will come into force on Nov. 1st, 1910.

August 3rd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The National Congress of Internal Medicine.

WITH an organising committee (Comitato Ordinatore) composed of the Senators Camillo Golgi and Luigi Mangiagalli (honorary presidents), Dr. Luigi Devoto (acting president), Dr. Carlo Forlanini and Dr. Maroni (vice-presidents), Dr. A. Boni (general secretary), and a strong working staff, this Congress, the nineteenth in the series, will hold its sittings from Oct. 4th to 8th next in Milan under exceptionally favourable auspices. The programme is an interesting one alike for the themes to be reported on and discussed and for the experts who are engaged to lead off and to follow suit. The first on the list is the Present State of Study, Scientific and Clinical on Cancer (reporters, Professor Devoto, Professor Moreschi, and Professor Veratti); the second, New Horizons in the Pathology and Therapeutics of Nephritis (reporter [illegible] Calabrese); the third, [illegible] Professor Bozzolo and [illegible] Objective Review of Italian Discovery and Scientific Work (reporter, Professor Giuffrè) In addition to this, there will be a "conference," introduced by the Senator Professor Mangiagalli, on the Mechanical Factor and the Biological Factor in the Pathology of Pregnancy, followed by a practical demonstration entitled, "Röntgenological Investigation of the Digestive Tract," by Professor Gortan. The English-speaking colleague is always courteously welcomed and entertained at these congresses, at none more cordially than in the schools of the Alta Italia, where at Pavia, as at Padua and Turin, his compatriots have studied to such effective purpose in the past.

The Policlinico of the University of Pavia.

While on the subject of Upper Italy and its medical schools I may mention that the great Lombard seat of learning is about to add to its resources a Policlinico on the lines of its Roman sister, the plans for which, eight in number, are to be exhibited on Sunday next (August 1st) in the Aula Magna of the University before the technical committee organised *ad hoc* by the Rector, the Senator Professor Camillo Golgi. On this committee, composed of seven experts, [illegible] president [illegible] iversity of [illegible] ademy of Fine Art in the same city. The Policlinico, among its many functions, will fulfil that of instruction in every branch of the profession. Its site will be in one of the most attractive quarters of Pavia, of which it is designed to be at once a humanitarian institution and an artistic ornament. Its estimated cost is at present about 3,000,000 fr. (£120,000).

Musicotherapia.

"The hyperæsthesia of our overwrought civilisation," as it has been somewhat pompously designated, is evoking new, or adapting old, therapeutic remedies—among the latter, according to Dr. F. Stoduto in the *Medicina Italiana*, being that of music, which Plato theoretically, and the Father of Medicine clinically, recognised as part of the equipment of the healing art.

> "As martial music is to fighting men,
> Should song be to humanity,"

sings the Victorian poet, and there is no doubt that the first of these æsthetic resources, with its appeal to rhythm and harmony, has its salutary uses, whether to soldiers on the march or to the public in quest of recreation, mental as well as physical, in the concert room. Its extension to the treatment of the invalid, particularly in the weary hours of convalescence, is a not unnatural development of the same idea —empirically recognised by the great Napoleon when he ordered the band of the "Régiment d'Orient" to play under the windows of the hospital, as well as by the military authorities of France in the day now passing, from whom the regimental bands in the provinces have orders, once or twice a week, to perform in hearing of the invalid wards of the garrison. The eminent French alienists, Pinel and Esquirol, were fully alive to the efficacy of music in many cases of mental disease, melancholia particularly; Dr. Fodéré found in the same art a stimulant or a sedative, indicated in special forms of insanity; and another authority, Dr. Rocquas, attests its clinical value in hypochondria. Dr. Stodato has many other witnesses to tell us, or remind us, of in the same sense; while, in the normal subject, the exercise of the voice in singing or, as Celsus recommends, in elocution needs no vindication as an adjunct to the promotion of health. The subject, as handled by the Italian physician, is a fascinating one and will doubtless attract to its discussion many other experts who are votaries at once of Hygiea and Melpomene.

July 30th.

THE University of Vienna has just conferred the M.D. degree on a lady who had previously obtained the Doctorate of Philosophy. This is probably the first time that a lady has held the double doctorate in any European University. The lady in question is the Countess Albertina Fritzi Marschall.

pupils in the University, and when (after a long interval) Fraser obtained (by examination) the Fellowship of the Royal College of Surgeons in 1895 in the school of which he lectured, the council of that institution acted wisely and well in electing him to the examinership in anatomy—a position which he retained to the close of his life and to the satisfaction of all concerned; even the rejected candidate was hardly ever heard to insinuate that his merits had been unfairly rated. Fraser's personal power in the school was emphasised by his appointment as "Dean of the Schools of Surgery" in 1905. His energy and directive skill and tact were never exercised with better effect than in connection with the duties of that position, which he retained to the close of his life. His mental energy was equalled (and illustrated) only by his physical; during the whole time of his professoriate at the Irish College of Surgeons he was never known to be a day absent from illness until he was struck down by that which ended in his death. He contracted some septic poisoning during the process of injecting a body for dissecting-room purposes in the early part of the present year when the period of his 25 years' service had just been completed, in celebration of which occasion he was presented with a service of memorial plate by the council and professors of the College at their last annual dinner.

Professor Fraser was assiduously attended in his illness by Mr. William Taylor, and his school colleague, Professor A. H. White. Copious pleural effusion took place, and on one occasion 70 ounces of septic fluid were removed. As in cases of most men of the cast-iron type of constitution, he struggled hard against his illness at first, and some of his friends thought that his early return to his beloved work was the final cause which made the fatal issue inevitable. He returned to his native home in Scotland some three weeks before his death.

ANDREW JAMES DUNCAN, M.D. EDIN., L.R.C.S. EDIN.

Dr. Andrew J. Duncan of Nethergate House, Dundee, who died on July 7th, after an illness of ten days from cerebral hæmorrhage, was born in India, his father having been in the service of the Honourable East India Company. His grandfather was the Rev. Dr. Andrew Duncan of Ratho, a Moderator of the General Assembly of the Church of Scotland, and for a long time the principal clerk of that court. Dr. Duncan had a distinguished university career and graduated M.D. in 1865. After studying for a year in Paris and Vienna he settled in Dundee in 1866. He very soon acquired a large practice and took a leading place among his professional brethren. For many years he acted as secretary to the Forfarshire Medical Association, and the established position which this body now holds is due in no small measure to his efforts in furthering its objects at that early period of its existence. He had a lifelong connexion with the Dundee Royal Infirmary, and held successively the positions of physician, consulting physician, and director. He was also one of the surgeons of the Dundee Eye Institution. In all professional affairs he took a warm and active interest, and a few years ago he was elected, for the usual term, President of the local branch of the British Medical Association. He was an able and careful physician, a refined, genial, and upright man, and his memory will always be held in the deepest respect by all who knew him.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—On July 29th, Licences to practise, and Diplomas of Member, were respectively conferred upon the under-mentioned gentlemen, who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Examining Board in England, and who have complied with the necessary by-laws:—

Richard Bernard Abraham, St. Thomas's Hospital; Gerald Graham Alderson, B.A. Cantab., Cambridge University and University College Hospital; Frederick James Aldridge, B.A. Oxon., Oxford University and St. Thomas's Hospital; Emmanuel Caetan Alles, L.M. & S. Ceylon, Ceylon Medical College, King's College and Middlesex Hospitals; Edward Bruce Allnutt, St. Bartholomew's Hospital; Frederick Leigh Angior, L.S.A. Lond., Liverpool University; Charles William Archer, B.A. Cantab., Cambridge University and St Bartholomew's Hospital; William Reginald Ward Asplen, Westminster Hospital; Joseph Dudley Benjafield, University College Hospital; Rustom Hormasji Bharucha, L.M. & S. Bombay, Bombay University, King's College, and University College Hospitals; Thomas Knowles Boney, St. Bartholomew's Hospital; Juan Manuel Brito-Salazar, M.D. Caracas, Caracas University and Middlesex Hospital; Samuel Stanley Brook, Guy's Hospital; Arthur James Brown, London Hospital; Walter Holcroft Cam, B.A. Cantab., Cambridge University and London Hospital; Arthur Skelding Cane, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Richard Stocker Carey, B.A. Cantab., Cambridge University and London Hospital; William John Chambers, M.B. Toronto, Toronto University and Middlesex Hospital; Keshiv Sadashiva Chasker, Bombay University, University C [illegible] Harold Martin McC [illegible] Bartholomew's Hos [illegible] Hospital; Robert [illegible] John Westray Crop [illegible] pool University; [illegible] Cutler, Guy's Hospital; Richard Molesworth Dennys, St. Bartholomew's Hospital; Gopal Vinayak Deshmukh, L.M. & S. Bombay, Bombay University and London Hospital; Alan MacDonald Dick, M.B., B.S. Edin., Edinburgh University; Robert Sydney Doran, Charing Cross Hospital; Marc Antoine Emile Duvivier, Guy's Hospital; Reginald Fisher, B.A. Cantab., Cambridge University and St. George's Hospital; Robert Hankinson Williams Fisher, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Alexander Lindsay Fitzmaurice, Guy's Hospital; Percy Leslie Foote, Otago University and London Hospital; John Crofton Fox, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Arthur Gordon Valpy French, St. Thomas's Hospital; Stephen Gordon, [illegible] James Graves, Co [illegible] Hospitals; John [illegible] sity College, Bri [illegible] Reginald Harvey, Sheffield University and Guy's Hospital; Herbert Wilks Heasman, Guy's Hospital; Joseph Stanley Hopwood, St. Thomas's Hospital; Arthur H [illegible] Charing Cross Hospital; David Isaacs, Guy's [illegible] London Hospital; Geoffrey [illegible] Thomas James Johnston, M. [illegible] London Hospital; David Ker [illegible] Martyn Henry Langford, Middlesex Hospital; William [illegible] M.A. Cantab., Cambridge University and Guy's Hospital; Ronald John Barcham Leney, B.A. Cantab., Cambridge University and London Hospital; John Thomas Lloyd, London Hospital; Hugh McLean, B.A. Cantab., Cambridge University and London Hospital; Russell Hardy Sidney Marshall, St. Mary's Hospital; Bernard Constable Maybury, St. Thomas's Hospital; Ernest Mayer, M.D. Zurich, Zurich University and St. Bartholomew's Hospital; Charles Anderson Meaden, St. Bartholomew's Hospital; John Cecil Wilson Methven, London Hospital; John Allen Noble, B.A. Oxon, Oxford [illegible] Hospital; Philip Douglas Oakley, [illegible] nich, Munich University and [illegible] inson, Otago University and [illegible] d Parsons, St. Mary's Hospital; Frederick Charles Pridham, St. Thomas's Hospital; William [illegible] Cardiff and London Hospital; Reginald George [illegible] Joseph Xavier Robert, M.B. [illegible] Hospital, and Birmingham [illegible] Ryland, St. Bartholomew's Hos [illegible] St. Thomas's and London Hosp [illegible] Charing Cross Hospital; Herbert [illegible] Hospital; *William John Smith, [illegible] and London Hospital; Walter [illegible] Charing Cross Hospital; Cecil C [illegible] Bertram Alfred Wood Stone, B. [illegible] University College, Bristol; Wil [illegible] Cantab., Cambridge University [illegible] Ariaratnapillai Vairakiam, L.M. & [illegible] and London Hospital; Johann [illegible] and John Murray Weddell, B.A [illegible] and St. Bartholomew's Hospital, [illegible] King's College Hospital; David Phillips Williams, Charing Cross Hospital; Stanislaus Swonnell Morton Wood, Westminster Hospital; and Charles Reynolds Woodruff, St. Bartholomew's Hospital.

* Diploma of M.R.C.S. granted on June 10th.

Diplomas in Public Health have been conferred upon the following gentlemen:—

Andrew Allison, M.B., Ch.B. Glasg., Glasgow University; Hugh Barr, M.B., Ch.B. Glasg., Glasgow University and King's College; James Aylmer Beamish, M.B., B.Ch. R.U.I., Royal University of Ireland and University College; Harry Boulcott Bolus, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and Guy's Hospital; Clement Henry Burton Bradley, M.B., Ch.M. Syd., L.R.C.P., M.R.C.S., Sydney University and University College; Thomas Evans, M.B. Lond., University College; James Fairley, M.B., Ch.B. Glasg., Glasgow University and University College; Robert Mylcraine Freer, M.D., C.M. Edin., Edinburgh University and London Hospital; Walter Ernest Fry, L.R.C.P., M.R.C.S., London Hospital and University College; Henry William Harding, M.D. Lond., L.R.C.P., M.R.C.S., St [illegible] London Hospitals; Richard Athelstane Parker [illegible] M.R.C.S., Cambridge University and [illegible] Thomas Edward Holmes, M.D., B [illegible] versity, Guy's Hospital, and Univers [illegible] Edward Littledale, M.D., B.Ch. Dub., Dublin University and [illegible] versity College; Walter St. Clare McClure, L.R.C.P., M.R.C.S., Sheffield University, London Hospital, and University College; Krishnaji Shripat Mhaskar, M.D., L.M. & S. Bombay, Bombay University and University College; Richard Alfred O'Brien, M.D., B.S. Melb., Melbourne University and University College; and Percy William Spaull, L.R.C.P., M.R.C.S., St. Thomas's Hospital and King's College.

The Diploma of M.R.C.S. has been granted, under the old regulations, to the under-mentioned gentleman:—

William James Morton, M.D., M.B., C.M. Aberd., L.R.C.P. & S. Edin., Edinburgh and Aberdeen Universities.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery held on July 19th, 22nd, and 23rd, the following gentlemen were approved in the subjects indicated below:—

Chemistry and Physics.—William Adderley, Brighton Technical [illegible] ...ical Technical College; ...ollege, Bristol; Robert ...laude Frederick Haine, ...ford, University College, ...ic Institute; Douglas ...echnical College; Arthur ...homas Eric Henderson, [illegible] Preston; [illegible] Wilmer [illegible]

C[illegible]

P[illegible]

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidate has passed the primary part of the Fellowship examination:—

J. B. Dorli, L.M. & S., Bombay University.

The following candidates have passed the final part of the Fellowship examination and have been admitted Fellows:—

J. Gordon, L.R.C.S.I.; L. S. Machado, L.R.C.S. Edin.; T. Murphy, B.Ch. Melbourne University; and F. Spicer, M.R.C.S. Eng.

APOTHECARIES' HALL OF IRELAND.—At the recent quarterly examinations the following candidates were successful:—

[illegible] and [illegible] ...erry, [illegible] and *James Stuart.*

THE WEST AFRICAN MEDICAL STAFF.—The following retirements are announced:—Mr. A. R. Rendle, medical officer, Southern Nigeria (Feb. 12th); Mr. J. C. Ryan, medical officer, Southern Nigeria (with gratuity, May 31st); Mr. R. E. McConnell, medical officer, Gold Coast (July 2nd); Mr. J. B. H. Davson, senior medical officer, Gold Coast (on pension, July 26th); and Mr. G. L Barker, medical officer, Gold Coast (receiving a gratuity, August 25th).—Mr. J. Tichborne, late senior medical officer, Northern Nigeria, has been reappointed senior medical officer, Gold Coast, vice Mr. J. B H. Davson, retired —The following have been appointed to the staff:—Dr. O. G. F. Luhn (Southern Nigeria, Feb. 20th), Dr. E. Slack (Gold Coast, March 6th), Dr. H. B Kent (Southern Nigeria, April 3rd), Mr. A. W. H. [illegible] Mr. E. M. Franklin (Sou[illegible] Brabazon (Gold Coast, J[illegible] (Southern Nigeria, July 24th). All dates refer to the present year.

KING EDWARD'S HOSPITAL FUND AND CHARITY ENTERTAINMENTS.—A subcommittee of King Edward's Hospital Fund for London, consisting of Lord Cavendish, Mr. J. G. Griffiths, Mr. A. E. Sydney, and Mr. F. M. Fry, were appointed in May last by the executive committee of King Edward's Hospital Fund to consider what action, if any, it might be advisable for the Fund to take in reference to the question of the expenses of charity entertainments. This committee has now issued its report, which states (1) that charity entertainments have been found to be a *means of securing income which could not be obtained in any other way*; (2) that neither extravagance nor abuse prevails to any large or general extent; and (3) that there are some points which require consideration by hospital authorities as soon as the proposal for an entertainment is mooted. If the hospital itself is responsible [illegible] management of an entertainment the question of the [illegible] between expenses and receipts should be fully con[illegible] On the other hand, in the case of entertainments [illegible]d by outside agencies a hospital does not incur the [illegible]nancial risk. Reference is made to the cost of the [illegible] of *professional* artists. The report adds: "The extent to which members of the dramatic, musical, and kindred professions give their time and skill gratuitously and ungrudgingly to the assistance of charity is a matter of common knowledge. ...... But ...... it is occasionally necessary for hospital committees to see that the deservedly high reputation of the professions in this respect is not used by less scrupulous or less public-spirited persons as a cloak for individual profit." In conclusion, the subcommittee states that it does not propose to formulate regulations binding upon hospitals, but it thinks that a perusal of its report may assist the managing committees in framing rules for their own protection.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Poor-law Medical Officers in Scotland.

On the motion of Mr. CATHCART WASON a return has been ordered by the House of Commons showing in how many and what parishes during the past three years Poor law medical officers in Scotland have vacated office, and what period in each case has elapsed before the appointments have been permanently refilled.

Milk and Dairies (Scotland) Bill.

The Milk and Dairies (Scotland) Bill has passed its report stage in the House of Lords with a few alterations in the text. An amendment has been introduced into the Bill in consequence of the changes made in it in committee to lay down that the local authority may refuse to grant a certificate of registration to dairy premises, or may revoke it if the premises are, or become, unsuitable for the purpose of a dairy business.

The Ambulance Service in the Metropolis.

Mr. PEEL has introduced a Bill into the House of Commons "to enable the managers of the Metropolitan Asylum District to establish and maintain an ambulance service in the county of London, and to empower the Commissioner of Police of the metropolis to enter into agreements with the said managers and with guardians of the poor with respect to the use and working of ambulances" The Bill was read a first time. Another Bill dealing with metropolitan ambulances is at present before a Select Committee of the House of Commons.

The Coroners Committee.

The first report of the Departmental Committee appointed to inquire into the law relating to coroners and coroners' inquests and into the practice in coroners' courts is a short document of an interim character, and embodying no definite conclusions. It states that the Committee has held 17 meetings and examined 32 witnesses with regard to matters specified in the terms of reference and also with regard to the question of deaths resulting from the administration of anæsthetics and the question of the danger arising from the use of flannelette in articles of clothing. Further evidence will be taken by the committee in the immediate future, but it is considered desirable that what has already been heard should be made public. It is issued in a separate blue book.

Milk Legislation.

The prospect of legislation relating to milk-supplies reaching the Statute Book this session becomes more remote. The fact is that a good deal of concern for the progress of both the Scottish and English Milk Bills is beginning to be felt by Members of Parliament who are interested in them. The question of compensation for cows slaughtered as tuberculous under the Tuberculosis Order of the Board of Agriculture presents difficulties which it may take time to overcome and in the pressure of other business, milk legislation may be sacrificed.

HOUSE OF COMMONS.

THURSDAY, JULY 29TH.

Bacteriological Investigations at Khartoum.

Sir HENRY CRAIK asked the Secretary of State for Foreign Affairs whether, in view of the useful work of the Gordon College at Khar-[illegible]

SPLENDIDE MENDAX.

THE following story affords an awful warning to those medical golfers whose inveterate addiction to their sport may lead them to diverge from their habitual accuracy of statement, and to all others who may be tempted to formulate an excuse without well considering its "unities." There was a certain surgeon hailing from this side of St. George's Channel and enjoying the hospitality of a Belfast house during the meeting of the British Medical Association. After his strenuous scientific exertions on the Thursday morning of the meeting, he betook himself to the links at Newcastle, a train journey which separated him by well over an hour from Belfast. How he fared on the links has not come to our ears, for the story reaches its climax in the city, at his hostess's dinner-table, where he had failed to put in an appearance. After allowing her absent guest the customary amount of grace, she had marshalled her dinner ranks and was proceeding with the meal. With the fish arrived a telegram from the absent one, in some such terms as this: "Very sorry. Missed train. Forgot to alter watch from English to Irish time." The message was communicated to the company, and as the proper murmur of sympathy was arising for the poor dinnerless fellow stranded at a distant railway station, his hostess suddenly exclaimed: "Hardly adequate! That would have made him just 25 minutes too early."

CONTRIBUTIONS TO THE HARRIS FUND.

AN appeal on behalf of the family of the late Mr. C. E. Harris, Ph.D., was published in THE LANCET of July 17th, p. 187. The following contributions have been received to date and are herewith gratefully acknowledged:—

	£	s.	d.		£	s.	d.
Miss Giles	5	0	0	Dr. Norman Dalton ...	1	1	0
Dr. T. T. O'Farrell ...	1	1	0	Miss T.	1	0	0
Dr. H. Vallance	1	1	0	Miss M. T....	1	0	0
Dr. R. J. Waugh... ...	1	1	0	King's College Hospital Students (per Mr. L. Game)	1	16	0
Dr. L. M. Chesney ...	2	2	0	Dr. W. H. Willcox... ...	1	1	0
Miss Mallet	20	0	0	Sir A. E. Wright	5	0	0
Dr. A. Rennie	2	2	0	Dr. J. W. H. Eyre	1	1	0
Dr. G. Harrison	2	2	0	Dr. A. E. Boycott	2	0	0
Dr. F. Shrubsall	2	2	0	Anonymous Donor... ...	10	0	0
Lieutenant-Colonel R. H. Firth	1	1	0	Sir H. Harben	5	0	0
Mr. F. Candy	1	1	0	Anonymous Donor... ...	0	10	6
Professor R. T. Hewlett	2	2	0	Dr. W. Turner	2	2	0
Dr. A. H. Gerrard ...	1	1	0	Dr. Lazarus-Barlow ...	2	2	0
Dr. G. E. Cartwright Wood	5	5	0	Mr. G. Lenthal Cheatle...	5	5	0
Dr. F. Drew Harris ...	1	1	0	Anonymous Donor... ...	5	0	0
Dr. E. M. Stacy	1	1	0	Dr. R. W. Gilmour... ...	2	2	0
Dr. Kabraji	0	10	6	Mrs. Sharp	3	3	0
Dr. Gordon Little ...	2	2	0	"S."	1	1	0
Dr. H. Dold	2	0	0	Captain R. McCarrison, I.M.S.	1	1	0
A Friend...	0	2	0	Messrs. Major and Co. ...	1	1	0
Professor G. H. F. Nuttall	2	0	0	Sanitas Company, Limited	1	1	0
Professor B. Moore ...	2	2	0	Messrs. W. Cooper and Nephews...	2	2	0
Mr. F. Winter	10	10	0	Jeyes' Sanitary Compounds, Limited	5	0	0
Anonymous Donor ...	0	5	0	Mrs. Giles	2	0	0
Professor Albert Carless	3	3	0				
Sir Hugh Beevor... ...	1	1	0				
Dr. H. Playfair	3	3	0				
Mr. A. Cheatle	1	1	0	Total to date ...	..£139	12	0

Part of the proceeds of this Fund will serve to defray the most pressing needs of the family, and the remainder will be invested in a ten years' annuity for the widow, it being hoped that after that time the children will be in a position to support their mother. Further contributions are earnestly requested and may be sent to N. H. Turner, L.R.C.P., M.R.C.S., &c., 35, Highbury-grove, London, N.; or Carl Prausnitz, M.D., "Normanton," Grove-road, Sutton, Surrey.

LUTTERWORTH GUARDIANS AND A HINDU MEDICAL OFFICER.

THE Lutterworth (Leicestershire) board of guardians recently appointed Mr. J. C. Bhuttercharji, a native of India, as medical officer for the third and fourth districts. At their meeting on July 29th the Local Government Board wrote enclosing the following petition which had been sent to it and asking for the guardians' observations on the matter:—

> "We, the undersigned pauper patients of the third and fourth districts of the Lutterworth Union, humbly petition the Local Government Board that the recent action of the Lutterworth guardians in appointing Dr. J. C. Bhuttercharji, a native of India, be set aside, and that we, who are unable to choose our own doctor, may be given one of our own race and colour."

Then followed 20 signatures. Mr. L. T. Topham said that on hearing of the petition, and in order to save the time of the board, he had asked the relieving officer how the poor people liked the doctor, and his report was almost unanimously in his favour. The Rev. C. G. Squirrell moved "that the board reaffirms its confidence in Dr. Bhuttercharji, and regrets the unfair treatment he is now receiving." Mr. S. A. Johnson seconded, and it was unanimously agreed to. In the subsequent discussion it was suggested that the signatures to the petition had not been obtained in a proper manner. Finally, the guardians interviewed Mr. Bhuttercharji and informed him that they had unanimously reaffirmed their confidence in him and hoped the Local Government Board would sanction his appointment.

THE POSSESSION OF FIREARMS.

AT the Hastings Quarter Sessions on July 27th Rene de Bourbon appealed against a conviction by the magistrates for having in his possession loaded firearms while in a state of intoxication. The decision of the magistrates was a term of imprisonment, and the deputy Recorder, Mr. George Elliott, K.C., after hearing counsel for the police and for the appellant, varied the sentence to one of the maximum penalty, the appellant agreeing to pay all the costs incurred and to be bound over. This decision was given on the understanding that the appellant was leaving the country for the Argentine, and the deputy Recorder expressed the hope that he would keep his promise not to come back to England. Bourbon had on several previous occasions been before the Hastings justices, and once before a pistol was found upon him. Recent events have shown that the Government has good ground for reviewing the law as it stands to-day as regards the sale of firearms. Something should be done to check the indiscriminate sale of these highly dangerous weapons.

FRENCH DICTIONARIES.

To the Editor of THE LANCET.

SIR,—I am much obliged to Dr. A. Cordes for his reply in THE LANCET of July 17th and have obtained the small dictionary which he indicated. I find that the full title of it is "Petit Dictionnaire National, Par Bescherelle Aîné, Auteur du Grand Dictionnaire National Paris Garnier frères, Éditeurs, 6, Rue des Saints-Pères." Messrs. Hachette et Cie, Charing Cross, London, were kind enough to procure it for me The price is 2*s*. The number of pages is 541. I am also obliged for the information about Bellows's dictionary, which I have known for many years. Thanking you for allowing me some of your valuable space,

I am, Sir, yours faithfully,

London, July 27th, 1909. GUILLAUME.

◆

H. R. K.—Dr. Julius Hirschberg's work on "The Renaissance of Ophthalmology" has been translated from the German into French by Dr. Daniel van Duyse, Professor of Ophthalmology in the University of Ghent, and it was the French translation which was reviewed in THE LANCET of June 19th last, p. 1759. This French translation is to be obtained from Wilhelm Engelmann, Leipzig. We do not know of an English translation of the work.

G. J. B.—Radium applicators similar to those used by Dr. Louis Wickham *can be obtained from* M. Henri Farjas, 15, *Rue Vignon*, Paris, and a letter written to him will procure all the necessary information and an illustrated catalogue.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Su [illegible] Demonstration of Cases in Wards. 12 noon, [illegible] —Dr. Bernstein. 2 P.M., Medical [illegible] Rays Mr. Dunn: Diseases of the E [illegible]

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

THURSDAY.—10 A.M., Lecture: [illegible] Demonstration of Cases in Wards. 2 P.M., [illegible] X Rays Mr. Dunn: Diseases of the [illegible] 5 P.M., Lecture:—Mr. Keetley: Clinical.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X *Rays*. *Dr. Davis*: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Dr. Davis: Tonsillitis—Acute, Chronic, Quinsy; Treatment.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. Mr. Harman: Diseases of the Eyes. 2 P.M., Medical and Surgical Clinics. X Rays. 2 30 P.M., Operations. Dr. Robinson: Diseases of Women.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUE

WEDNESDAY (11th ... University College (2 P.M.), Royal ... M.), Charing Cross (3 P.M.), St. Th ...), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.),

Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THU

FR

...), London (2 P.M.), Middlesex University College (9.15 A.M.), (1 P.M.), St. Mary's (10 A.M.), ...uy's (1.30 P.M.), Children, Gt. West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index to Vol. I. of 1909, which was completed with the issue of June 26th, and the Title-page to the volume, were given in THE LANCET of July 3rd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1909 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND Co., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 5th, 1909.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo	Maximum Temp Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks.
July 30	29.82	S.W.	...	92	70	59	59	60	Raining
" 31	29.94	W.	0.27	119	74	60	62	66	Cloudy
Aug. 1	30.09	W.	...	91	68	58	56	61	Cloudy
" 2	29.96	N.W.	0.27	100	62	53	56	59	Cloudy
" 3	30.22	N.W.	...	115	64	49	61	55	Fine
" 4	30.23	W.	...	118	74	55	56	60	Fine
" 5	30.24	W.	...	99	63	57	59	64	Overcast

Communications, Letters, &c., have been received from—

A.—Mr. E. Arnold, Lond.; Agra Medical School, Principal of; Messrs. Allen and Hanburys, Lond.; Dr. Z. Abdalla, Lond.; Dr. John Allan, Edinburgh; Mr. Augusto Albrici, Bormio; Messrs. D. Appleton and Co., Lond.

B.—Mr. C. Birchall, Liverpool; Bologna Medical Society, Italy, [illegible] of; Blackburn and [illegible] Infirmary, [illegible] of Education, Lond., Secretary of; British Diamalt Co., Lond.; [illegible] and Co., Lond.; Dr. H. Benjafield, Newtown, Tasmania; Dr. T. M. Bonar, Probus; Messrs. Blachford Bros., Southbourne-on-Sea; Mr. H. J. Bromley, Lond.; Dr. G. D. Barton, Weybridge; [illegible] Homes, National [illegible] Lond., [illegible] ard of Agriculture and Fisheries, Lond.

C.—Dr. Aldo Castellani, Colombo; Mr. F. Cooke, Leicester; C. O'H.; Casein Co., Lond.; C. A. L.; Messrs. Cassell and Co., Lond.; Coventry and Warwickshire Hospital, Secretary of; Dr. Hilda Clark, Oxford; Colonial Office, Lond., Private Secretary of; Children's Country Holidays Fund, Lond., Secretary of; Cotswold Sanatorium, Stroud, Medical Superintendent of; Mr. F. W. Clarke, Chorlton-cum-Hardy; Chesterfield and North Derbyshire Hospital, Secretary of; Messrs. Corbyn, Stacey, and Co., Lond.; C. E.

D.—Mr. C. E. Denning, Epping.

E.—Edinburgh School of Medicine for Women, Secretary of; *Essex County Telegraph*, Colchester, Manager of; E. L. A.

F.—Mr. M. Fishe, Wolverhampton; Messrs. Feeney and Co., Birmingham; F.P.

G.—Mr. H. Tyrrell Gray, Lond.; [illegible] Co., Lond.; [illegible] Co., Lond., [illegible] Manager of; [illegible] V. Gordon-Green, R.N., Portsmouth; Guy's Hospital Medical School, Lond., Dean of.

H.—Mr. Reginald Hayes, Lond.; Dr. E. R. Hunt, Brighton; Mr. C. T. W. Hirsch, Woolwich; Messrs. W. C. Henderson and Son, St. Andrews; Haydock Lodge, Newton-le-Willows, Secretary of; Mr. P. Harper, Lond.; Hong-Kong, His Excellency the Governor of; Huddersfield Cor[illegible] fficer of [illegible] Syphon Co., Lond.

I.—Irish Medical Schools and Graduates' Association, Belfast, Hon. Provincial Secretary of; Inspector-General of Civil Hospitals, Bengal.

J.—Messrs. J. T. Jameson and Co., Dublin; *Journal of R.A.M.C.*, Lond., Editor of; J. S.; J. D. R.

K.—Kathiawar, India, Agency Surgeon of; Kent and Canterbury Hospital, Secretary of; Kidbrook House, Blackheath, Matron of; King Edward's Hospital Fund for London, Hon. Secretaries of; King's College Hospital, Lond., Dean of; Dr. Percy Kidd, Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Leicester Infirmary, Secretary of; London Temperance Hospital, Chairman of; London School of Medicine for Women, Secretary of; Mr. H. K. Lewis, Lond.

M.—Mr. P. Metz, Birmingham; Dr. A. Macdonald, Culross; Mr. W. J. Melhuish, Upper Parkstone; Metropolitan Ear, Nose, and Throat Hospital, Lond.; Mr. E. Merck, Lond.; Maltine Manufacturing Co., Lond.; Messrs. May, Roberts, and Co., Lond.; Captain R. McCarrison, I.M.S., Guildford; Dr. Donald J. Munro, Lond.; Mr. James MacMunn, Lond.; Mr. F. G. Mackereth, Lond.; Medico-Psychological Association, Epsom, Hon. General Secretary of; Medical Society for the Study of Suggestive Therapeutics, Leicester, Hon. Secretary of; Monkwearmouth, &c., Hospital, Secretary of; Macclesfield Infirmary, Secretary of.

N.—Nottingham General Dispensary, Secretary of; Mr. J. C. Needes, Lond.; Mr. H. Needes, Lond.

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The Hunterian Lectures

ON

MALFORMATIONS OF THE HEART.

Delivered before the Royal College of Surgeons of England on March 8th, 10th, and 12th, 1909,

By ARTHUR KEITH, M.D. Aberd., F.R.C.S. Eng.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND CONSERVATOR OF THE MUSEUM

LECTURE II.[1]

Delivered on March 10th

Transposition of the arterial stems.—If the theory of a bulbus element in the human heart helps us to understand the numerous abnormalities which were discussed in my last lecture, it is of even greater assistance in clearing up the various abnormal and very puzzling conditions included under the term of transposition of the aorta and pulmonary artery. The pulmonary artery in these cases of transposition arises behind the aorta, over the left ventricle, while the aorta springs from the infundibulum of the right ventricle. Thus the venous blood is thrown by the right side of the heart into the aorta and systemic circulation while the arterial blood is carried back to the lungs by the pulmonary artery. Altogether I have examined 25 hearts in which the arterial trunks were transposed, six of them being in the College collection Fig. 11 shows the arrangement of parts in a specimen which may be regarded as typical of the group. The aorta, recognised not only by its distribution but also by the fact that the coronary arteries are given off from it, arises from the infundibulum of the right ventricle—that part of the ventricle which is derived from the bulbus cordis. The pulmonary artery occupies the position of the aorta and springs from the left ventricle. The exact condition of parts is best seen by examining a section made at the base of the heart (Fig. 12). *In the normal heart the aortic orifice is situated behind the* pulmonary orifice and immediately anterior to the left auricle and left auriculo ventricular orifice. The aortic cusps corresponding to the origin of the right and left coronary arteries—right and left coronary cusps—are situated towards the sternal margin of the aorta, the non-coronary towards the dorsal margin. In the abnormal heart the position of parts is reversed; now the aorta is in front and the pulmonary artery behind; the position of the aortic cusps is reversed, the non-coronary cusps being now not on the dorsal but on the sternal margin of the aorta. Further, it is to be noted that the aorta arises from the infundibulum or persistent bulbus cordis, while the pulmonary artery arises directly from the left ventricle, the part of the bulbus corresponding to it having atropied, but the atrophy is sometimes only partial.

FIGS 11 AND 12.

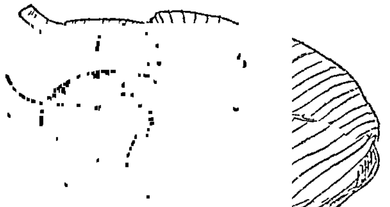


Fig. 11

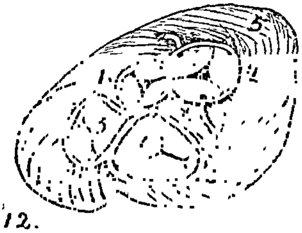


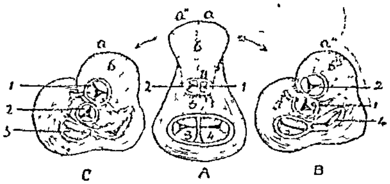
Fig 12.

Fig 11—Heart showing transposition of the great stems (viewed on its right side). 1, Aorta; 2, pulmonary artery arising behind aorta, 3, right auricle, 4, superior vena cava, and 5, infundibulum of right ventricle giving origin to aorta

Fig. 12—The base of the heart shown in Fig 11. 1, Pulmonary artery, 2, aorta (non coronary cusp), 3, anterior cusp of mitral valve, 4, septal cusp of tricuspid, 5, infundibulum of right ventricle, and 6, triangle of persistent basal musculature

How is transposition brought about? The explanation offered by Rokitansky—the only explanation yet given—is that the aortic end of the heart may undergo an abnormal degree of rotation, either to the right hand or to the left, and the form of transposition depends on the extent of the rotation. Such a theory does not really help us The clue to the problem is to be found in a study of the remarkable transformation of the mammalian embryonic heart. We have already seen how the lesser curvature of the bulbo-ventricular segment of the cardiac tube shrivels up during the early period of development. By the third week the ventricular segment of the primitive cardiac tube is bent transversely towards the right (Fig. 9, Lecture I.), so that it occupies a position comparable to the adult stomach, the *auricular canal representing the œsophagus and the bulbar* part the pyloric end In Fig. 13 A I have represented what I conceive to be the primitive form of the bulbo-ventricular part of the heart; in Fig 13 B is shown the atrophy that leads to the aorta being brought into juxtaposition with the mitral orifice; and in 13 C the changes which lead to the pulmonary artery being brought into contact with that orifice. In the first case the bulbus connected with the aorta atrophies and the part connected with the pulmonary artery undergoes an expansion; in the second case the processes are reversed. The aorta instead of being the dorsal vessel is now the ventral and situated towards the greater instead of towards the lesser curvature (Fig 13 C). With the atrophy of the lesser curvature of the ventricle and pulmonary part of the bulbus, it is the pulmonary artery in place of the aorta that comes into contact with the auricles In effect, the origin of the great vessels is reversed as regards the auricular canal (compare 13 B with 13 C). No one has seen an embryo in which the pulmonary part of the bulbus was undergoing a process of atrophy in place of one of expansion, but the assumption is justified by the fact that a complete explanation is thereby obtained of the condition seen in hearts with transposed arterial trunks. The theory explains why the aorta is in front of the pulmonary artery and also the reversion in the position of its valves We see further why the bulbus cordis persists in connexion with the aorta and forms the infundibulum, while the part of the bulbus connected with the pulmonary artery atrophies

FIG. 13.



Showing the atrophy of the primitive cardiac tube which leads to the normal position of the arterial orifices (B) and to the abnormal position (C) A, Primitive ventricle and bulbus cordis viewed on the aspect of their lesser curvature B, The normal position of the arterial orifices C, The abnormal position [illegible] orifice, 3, mitral orifice, [illegible] common ventricle, and 6, [illegible] f bulbus which atrophies [illegible] half of bulbus which atrophies in C, the abnormal form.

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[1] Lecture I. was published in The Lancet of August 7th, 1909, p. 359

ON THE PREPARATION AND KEEPING PROPERTIES OF ANTITYPHOID VACCINES.

By D. SEMPLE, M.D., M.CH. R.U.I., D.P.H. CAMB.,
LIEUTENANT-COLONEL, R.A.M.C. (RETIRED); DIRECTOR, CENTRAL RESEARCH INSTITUTE, KASAULI, PUNJAB, INDIA;
AND
H. S. MATSON, M.B., B.S. LOND.,
CAPTAIN, I.M.S.

THE use of bacterial vaccines for therapeutic and prophylactic purposes is still sufficiently recent to allow of some divergence of opinion in the details of their preparation, and as this is a point which seriously affects their efficiency and keeping properties, the subject is worthy of consideration. In most laboratories where the preparation of bacterial vaccines is carried out it is the usual custom to sterilise by means of heat, and subsequently to add a small percentage of some reliable antiseptic such as carbolic acid or lysol.

A killed bacterial culture capable of functioning as a vaccine is in reality a toxin (chiefly endotoxin) and is composed of dead bacterial cells, together with their products of secretion and disintegration. According to Ehrlich, a toxin possesses two specific atomic groups—viz., a haptophore or combining group, and a toxophore or toxic group. The haptophore group when untampered with is known to be fairly stable, but it is very susceptible to the action of heat and certain chemical agents. A toxin of bacterial origin deprived of its haptophore group is no longer in a position to function as a toxin when used on susceptible animals, or to influence the cells of the body in such a way as to call forth an immunising response by the production of antibodies. Similarly, a bacterial vaccine deprived of its haptophore group, or which has been prepared in such a manner that the haptophore group becomes attenuated soon after preparation and finally disappears, is no longer to be relied upon in the production of an immunising response.

The toxophore group is more complicated than the haptophore group and is liable, even when untampered with, to become converted into toxoids, and in the case of the endotoxins into toxons; but even toxoids and toxons, provided their haptophore groups remain intact, are still capable of producing an active immunising response. Most of the bacterial vaccines with which we are acquainted are very sensitive to the action of heat, light, and also to some chemical substances. All are injuriously affected by oxidising agents and by strong bases and acids.

As very little is known about the chemical nature of the toxins which enter into the composition of vaccines, it follows that we are still in the dark as to the changes which take place when they are subjected to the action of heat, light, and chemical agents. There are, however, a few facts which have gradually come to be recognised, and in dealing with toxins and vaccines it is necessary to take these facts into consideration.

The German Plague Commission, working in Bombay in 1898, proved that heating a vaccine to 60° C. after the addition of an antiseptic greatly diminishes its immunising properties, and may remove them altogether. Oppenheim and Mitchell[1] make the following statement about the action of heat on toxins: "A special characteristic of toxins is their extreme sensitiveness to the action of heat. In their normal solutions they soon perish at temperatures above 50° C. At 80° C. their action is at once destroyed, and even at 45° C. they are slowly decomposed; individual ferments differ but little in this respect. On the other hand, they offer great resistance to the action of dry heat. Solid preparations can be heated to over 100° C. without suffering injury."

One of us (H. S. M.) has found that evaporation at 60° C. from an alcoholic solution completely destroyed the toxic properties of a filtrate of a broth culture of Shiga's dysentery bacillus, of which a small dose (5 cubic centimetres) had previously proved rapidly fatal to a rabbit. Kitasato in 1891 proved that diphtheria and tetanus poisons in solution are rapidly destroyed by the action of sunlight and diffuse daylight. In the dry state we know that these poisons can withstand the action of light for a prolonged period. It is a well-known fact that the specific agglutinating reaction of a serum can take place when dead bacteria are used, but when the bacteria have been killed by heating the emulsions or cultures to a temperature of 60° C. or more, their agglutinability is diminished, and more agglutinins are required to produce the specific reaction.

The chemical agents harmful to toxins are numerous. It would appear that toxins are very sensitive to nearly all chemical agents, with the exception of carbolic acid. Iodine is an example of a substance which acts on the toxophore group of toxins to form toxoids. Advantage is taken of this fact in the early stages of the immunisation of animals with tetanus toxin. A small percentage of iodine mixed with the toxin during the first few doses tones down its toxicity and paves the way for the administration of the untreated toxin.

It is evident from the foregoing facts that the utmost care should be taken in the preparation of a vaccine intended for therapeutic or prophylactic purposes, to avoid any conditions known to lead to the disintegration of the active principle. It is necessary that its original properties should be interfered with as little as possible.

With the exception of anthrax vaccine, bacterial vaccines are prepared from non-spore-forming bacteria (strictly speaking, anthrax is only a modified exception, for the vaccines in this case are generally prepared from cultures in which spore formation is artificially prevented, or before it has had time to take place). This fact alone renders the sterilisation of a vaccine a comparatively easy task, provided that care is taken to ensure that absolutely pure cultures and pure media are used.

The bacillus typhosus is killed by heating it either in a broth medium or in normal salt solution for a few minutes at a temperature of from 57° to 60° C. It is also killed in either of the above media within 24 hours by the addition of 0·5 per cent. pure carbolic acid. In the preparation of antityphoid vaccine it is necessary to kill the living cultures of B. typhosus from which it is prepared, and it is necessary also to lessen the chances of any subsequent contamination being able to take place. Heating the vaccine at a temperature of 60° C. for 20 minutes, or 53° C. for one hour, will accomplish the former, and the addition of 0·5 per cent. carbolic acid, or 0·25 per cent. lysol, the latter. The addition of 0·5 per cent. pure carbolic acid is by itself quite sufficient to accomplish both objects, and besides it has the additional advantage of enabling us to dispense with the harmful effects of heat.

Another essential in the preparation of vaccines is to prepare them in such a way that they retain their immunising properties as long as possible. With the object of testing whether a vaccine sterilised by the addition of 0·5 per cent. carbolic acid and without any preliminary heating process retains its immunising properties for more than a year, we carried out the series of experiments recorded in this paper, and tested a vaccine stored at room temperature in a dark cupboard at the Central Research Institute, Kasauli, for over two years, against a freshly prepared vaccine. Both vaccines were prepared from the same strain of B. typhosus and in exactly the same way—viz., from a broth culture incubated at 37° C. for 48 hours and then sterilised by the addition of 0·5 per cent. carbolic acid only. The results of the experiments carried out on rabbits and guinea-pigs with these two vaccines (old and fresh vaccines) are recorded in the tables numbered I. to VII. inclusive and Charts 1 and 2. The blood change which took place when the same two vaccines were used on men are recorded in Tables VIII. and IX. and Charts 3 and 4.

In the tables numbered X. to XIII. inclusive, and Charts 5, 6, and 7, three vaccines, each prepared from the same strain of B. typhosus as that used in the previous experiments, but sterilised by heat and the subsequent addition of an antiseptic, are contrasted—viz., an old vaccine and a fresh vaccine, each sterilised by heating at a temperature of 60° C. for 20 minutes, and the subsequent addition of 0·5 per cent. carbolic acid; and a fresh vaccine sterilised by heating for one hour at a temperature of 53° C. and the subsequent addition of 0·25 per cent. lysol.

The results recorded in these tables and the charts attached to them require little or no explanation. As regards the blood changes which took place after inoculation with these vaccines, it was decided to test only for the agglutination and opsonic reactions. In testing for opsonins the

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[1] Toxins and Antitoxins, by Oppenheim and Mitchell, 1906, London, Charles Griffin and Co.

TABLE I.—*Experiments on a Rabbit to Test the Immunising Properties of an* Old Antityphoid Vaccine. *This vaccine was prepared on Nov. 25th, 1906, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating used. It contained 420,000,000 bacilli per cubic centimetre.*

No. of experiment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of serum.	Widal's reaction and dilutions used.									Opsonic Index.	[illegible]		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date.	Result.
1	Dec. 28th, 1908.	Bacilli. 0 2 c.c. = 84,000,000	Jan. 7th, 1909.	+	+	+	+	+	+	−			0 94	1	Feb. 12th, 1909.	Survived; was never ill.
	Jan. 11th, 1909.	0 3 c.c. = 126,000,000	„ 21st, „	+	+	+	+	+	+	+	−		8 2			
	„ 23rd, „	0 5 c c. = 210,000,000	Feb. 6th, „	+	+	+	+	+	+	+	±	−	5 9			
Control rabbit.	*Nil.*	*Nil.*	Jan. 7th, „	+	±	−										
			„ 21st, „	+	±	−										
			Feb. 6th, „	+	±	−										

TABLE II.—*Experiments on Rabbits to Test the Immunising Properties of an* Old Antityphoid Vaccine. *This vaccine was prepared on Nov. 25th, 1906, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating used. It contained 420,000,000 bacilli per cubic centimetre.*

No. of experiment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic Index.	[illegible]		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
1	Dec. 28th, 1908.	Bacilli. 0 2 c.c. = 84,000,000												1	Feb. 12th, 1909.	Survived; was never ill.
	Jan. 11th, 1909	*0 3 c c* =126,000,000														
	„ 23rd, „	0 5 c.c =210,000,000														
2	„ 4th, „	0 2 c.c. = 84,000,000	Jan. 31st, 1909.	+	+	+	+	+	+	+	±	−	5 15	1½	Feb. 14th, 1909.	„
	„ 14th, „	0 3 c.c. =126,000,000														
	„ 23rd, „	0 5 c c. =210,000,000	Feb. 3rd, „	+	+	+	+	+	+	+	+	±	5 64			
3	„ 9th, „	0·2 c c. = 84,000,000	„ 7th, „	+	+	+	+	+	+	+	+	−	6 56	2	Feb. 15th.	Died Feb. 16th.
	„ 16th, „	0·3 c c. =126,000,000														
	„ 23rd, „	*0 5 c c* =210,000,000														
4	„ 9th, „	0 2 c c. = 84,000,000												Not tested.		
	„ 16th, „	0·3 c c =126,000,000														
	„ 23rd, „	0 5 c.c. =210,000,000														
Two control rabbits.	*Nil.*	*Nil.*	Jan. 31st, 1909.	+	±	−										
			Feb. 3rd, „	+	±	−										
			„ 7th, „	+	±	−										

TABLE III.—*Experiments on Rabbits to Test the Immunising Properties of* Fresh Antityphoid Vaccine. *This vaccine was prepared on Dec. 21st, 1908, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating used. It contained 530,000,000 bacilli per cubic centimetre*

No. of experiment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic Index.	Effects of the intraperitoneal injection of a virulent strain of B. typhosus recently isolated from a case of typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
1	Jan. 9th, 1909	Bacilli. 0 1 c c. = 53,000,000												1	Feb. 12th, 1909.	Survived; was never ill.
	„ 16th, „	0 4 c.c = 212,000,000														
	„ 23rd, „	0 5 c c = 265,000,000														
2	„ 9th, „	0 1 c.c. = 53,000,000	Jan. 31st, 1909.	+	+	+	+	+	+	+	+	−	5 2	1½	Feb. 14th, 1909.	„
	„ 16th, „	0 4 c c. = 212,000,000	Feb. 3rd, „	+	+	+	+	+	+	+	+	±	6 07			
	„ 23rd, „	0 5 c.c. = 265,000,000	„ 7th, „	+	+	+	+	+	+	+	+	−	6 05			
3	„ 8th, „	0 2 c c = 106,000,000												2	Feb 15th, 1909.	Died Feb. 16th.
	„ 15th, „	0 4 c c. = 212,000,000														
	„ 23rd, „	0 5 c c. = 265,000,000														
4	„ 8th, „	0·2 c c. = 106,000,000												Not tested.		
	„ 15th, „	0 4 c.c. = 212,000,000														
	„ 23rd, „	0 5 c c. = 265,000,000														
Two control rabbits.	*Nil.*	*Nil.*	Jan. 31st, 1909.	+	±	−										
			Feb. 3rd, „	+	±	−										
			„ 7th, „	+	±	−										

TABLE IV.—*Experiments on Rabbits to Test the Immunising Properties of an* Old Antityphoid Vaccine. *This vaccine was prepared on Nov. 25th, 1906, from a 48 hours broth culture. It was sterilised by the addition of 0·6 per cent. carbolic acid. No heating used. It contained 420,000,000 bacilli per cubic centimetre.*

No. of experi-ment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	Effects of the intraperitoneal injection of a virulent strain of B. typhosus recently isolated from a case of typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
1	Jan. 24th, 1909.	Bacilli. 0·2 c.c. = 84,000,000												1	Feb. 18th, 1909.	Survived; was never ill.
	Feb. 1st, „	0·3 c.c. = 126,000,000														
	„ 9th, „	0·5 c.c. = 210,000,000	Feb. 1st, 1909.	+	+	+	+	+	−				1·3			
			„ 9th, „	+	+	+	+	+	+	+	±	−	5·45			
2	Jan. 24th, „	0·2 c.c. = 84,000,000	„ 16th, „	+	+	+	+	+	+	+	+	±	7·5	1½	Feb. 19th, 1909.	„
	Feb. 1st, „	0·3 c.c. = 126,000,000	„ 19th, „	+	+	+	+	+	+	+	+	±	8 6			
	„ 9th, „	0 5 c.c. = 210,000,000														
Two control rabbits.	*Nil.*	*Nil.*	„ 1st, „	+	±	−										
			„ 9th, „	+	±	−										
			„ 16th, „	+	±	−										
			„ 19th, „	+	±	−										

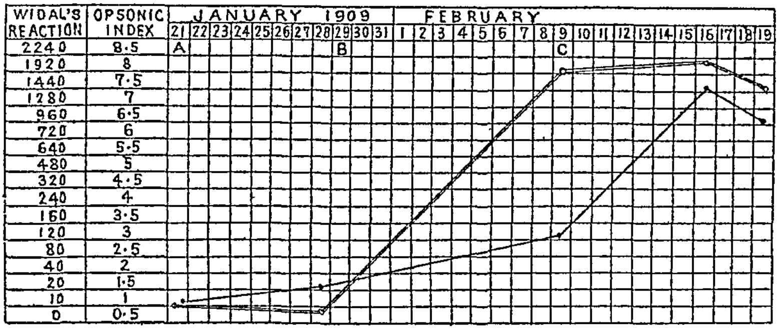
TABLE V.—*Experiments on Rabbits to Test the Immunising Properties of* Fresh Antityphoid Vaccine. *This vaccine was prepared on Dec. 21st, 1908, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating employed. It contained 530,000,000 bacilli per cubic centimetre.*

No. of experi-ment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	Effects of the intraperitoneal injection of a virulent strain of B. typhosus recently isolated from a case of typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
1	Jan. 24th, 1909.	Bacilli. 0 2 c.c.=106,000,000												1	Feb. 18th, 1909.	Survived; was never ill.
	Feb. 1st, „	0·3 c.c.=159,000,000														
	„ 9th, „	0·5 c.c.=265,000,000	Feb. 1st, 1909.	+	+	+	+	+	−				1·25			
			„ 9th, „	+	+	+	+	+	+	+	±	−	5·8			
2	Jan. 24th, „	0 2 c.c.=106,000,000	„ 16th, „	+	+	+	+	+	+	+	+	±	8·2	1½	Feb. 19th, 1909.	„
	Feb. 1st, „	0·3 c c.=159,000,000	„ 19th, „	+	+	+	+	+	+	+	+	±	8·9			
	„ 9th, „	0·5 c.c.=265,000,000														
Two control rabbits.	*Nil.*	*Nil.*	„ 1st, „	+	±	−										
			„ 9th, „	+	±	−										
			„ 16th, „	+	±	−										
			„ 19th, „	+	±	−										

TABLE VI.—*Experiments on Guinea-pigs to Test the Immunising Properties of* Old Antityphoid Vaccine. *This Vaccine was prepared on Nov. 25th, 1906, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating used. It contained 420,000,000 bacilli per cubic centimetre.*

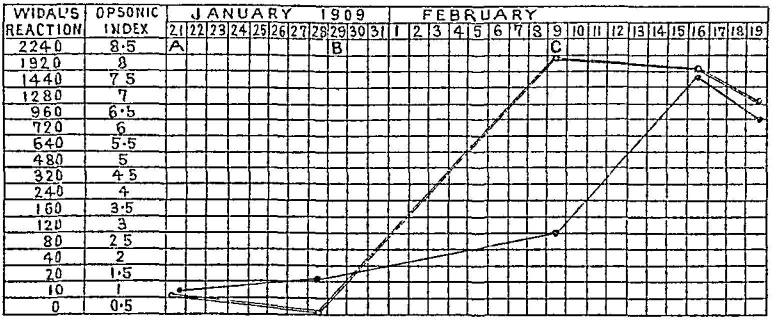
No. of experi-ment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	Effects of the intraperitoneal injection of a virulent strain of B. typhosus recently isolated from a case of typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
1	Jan. 21st, 1909.	Bacilli. 0 2 c.c.= 84,000,000												1	Feb. 18th, 1909.	Survived; was never ill.
	„ 29th, „	0·3 c.c.=126,000,000														
	Feb. 9th, „	0 5 c.c.=210,000,000	Jan. 28th, 1909.	+	+	−							0·64			
			Feb. 9th, „	+	+	+	+	±	−				8 2			
2	Jan. 21st, 1909.	0·2 c.c.= 84,000,000	„ 16th, „	+	+	+	+	+	+	+	+	±	8 4	1½	Feb. 19th, 1909.	„
	„ 29th, „	0·3 c.c.=126,000,000	„ 19th, „	+	+	+	+	+	+	+	±	−	7·5			
	Feb. 9th, „	0·5 c c.=210,000,000														
Two control guinea-pigs.	*Nil.*	*Nil.*	Jan. 28th, „	+	±	−										
			Feb. 9th, „	+	±	−										
			„ 16th, „	+	±	−										
			„ 19th, „	+	±	−										

CHART 1.—*Agglutination and Opsonic Chart of the Pooled Sera of the Experiments referred to in Table VI. Two guinea-pigs inoculated with an Old Antityphoid Vaccine, prepared on Nov. 25th, 1906, sterilised by the addition of 0·5 per cent. carbolic acid only.*



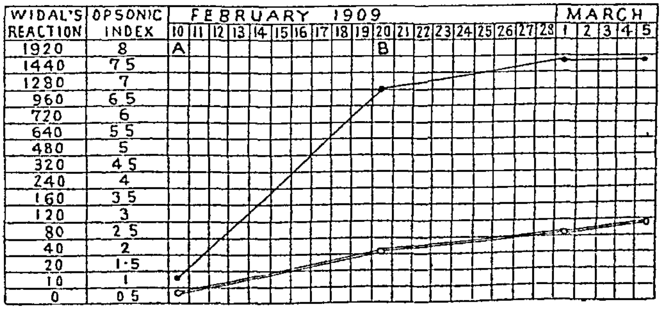
A, First inoculation 84,000,000 bacilli. B, Second inoculation 126,000,000 bacilli. C, Third inoculation 210,000,000 bacilli.
Double line = opsonic index.

CHART 2.—*Agglutination and Opsonic Chart of the Pooled Sera of the Experiments referred to in Table VII. Two guinea-pigs inoculated with Fresh Antityphoid Vaccine prepared on Dec. 21st, 1908. Sterilised by the addition of 0·5 per cent. carbolic acid only.*



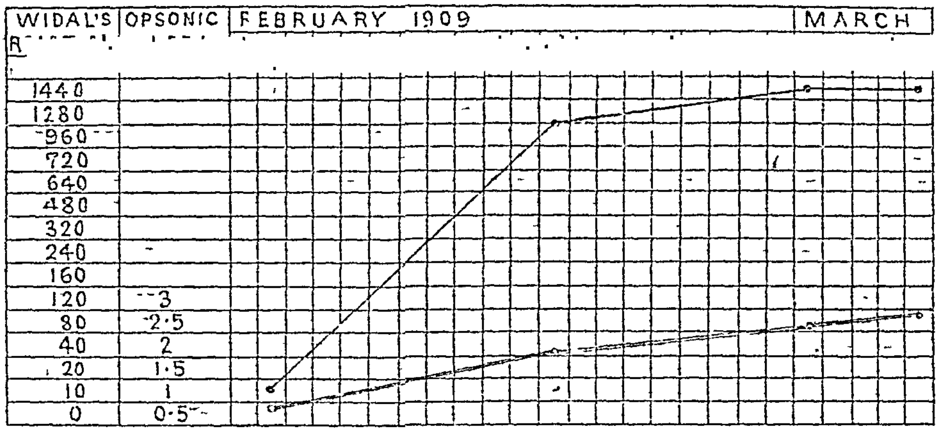
A, First inoculation 106,000,000 bacilli. B, Second inoculation 159,000,000 bacilli. C, Third inoculation 265,000,000 bacilli.
Double line = opsonic index.

CHART 3.—*Agglutination and Opsonic Chart of the Pooled Sera of Three Men Inoculated with an Old Antityphoid Vaccine prepared on Nov. 7th, 1906, sterilised by the addition of 0·5 per cent. carbolic acid only. (Referred to in Table VIII.).*



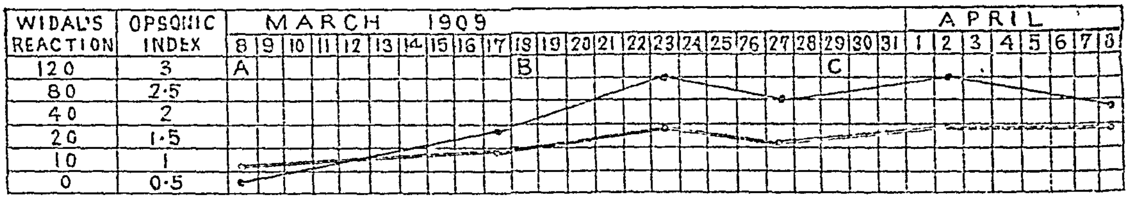
A, First inoculation 267,500,000 bacilli. B, Second inoculation 535,000,000 bacilli.
Double line = opsonic index.

CHART 4.—*Agglutination and Opsonic Chart of the Pooled Sera of Three Men Inoculated with a Fresh Antityphoid Vaccine prepared on Dec. 21st, 1908, sterilised by the addition of 0·5 per cent. carbolic acid only. (Referred to in Table IX.)*



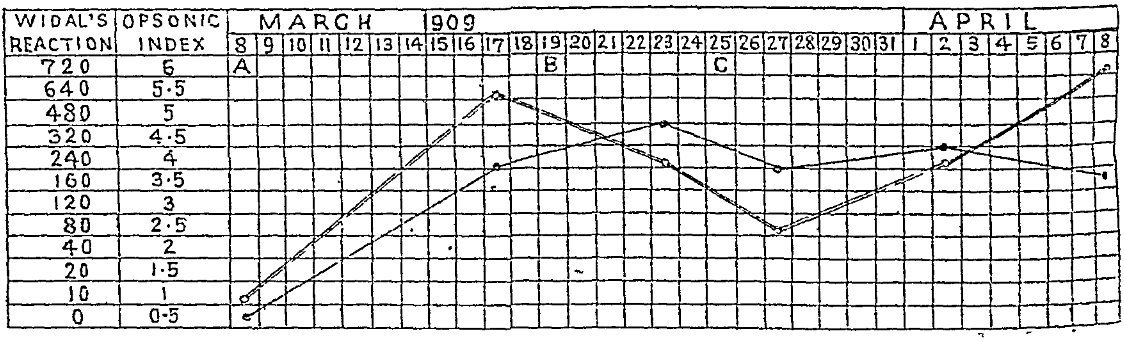
A, First inoculation 265,000,000 bacilli. B, Second inoculation 530,000,000 bacilli. Double line = opsonic index.

CHA[illegible] *and Opsonic Chart of the Experiments referred to in Table X. Two rabbits inoculated with an Old [illegible] prepared Nov. 24th, 1906. Sterilised by heating for 20 minutes at 60° C. and the subsequent addition of 0·5 per cent. carbolic acid.*



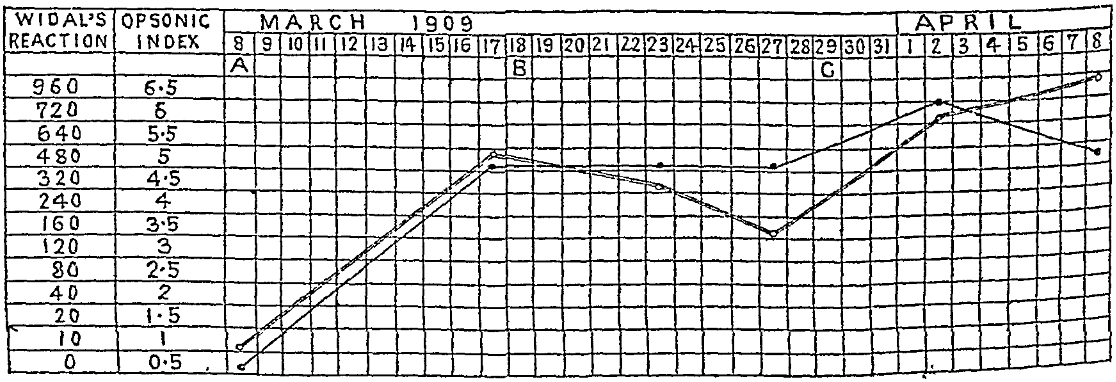
A, First inoculation 84,000,000 bacilli. B, Second inoculation 126,000,000 bacilli. C, Third inoculation 210,000,000 bacilli. Double line=opsonic index.

CHART 6.—*Agglutination and Opsonic Chart of the Experiments referred to in Table XI. Two rabbits inoculated with a Fresh Antityphoid Vaccine prepared on March 7th, 1909. Sterilised by heating for 20 minutes at 60° C. and the subsequent addition of 0·5 per cent. carbolic acid.*



A, First inoculation 84,000,000 bacilli. B, Second inoculation 126,000,000 bacilli. C, Third inoculation 210,000,000 bacilli. Double line=opsonic index

CHART 7.—*Agglutination and Opsonic Chart of the Experiments referred to in Table XIII. Two rabbits inoculated with a Fresh Antityphoid Vaccine prepared on March 7th, 1909. Sterilised by heating for one hour at 53° C. and the subsequent addition of 0·25 per cent. lysol.*



A, First inoculation 84,000,000 bacilli. B Second inoculation 126,000,000 bacilli. C, Third inoculation 210,000,000 bacilli. Double line=opsonic index.

serum was pooled (with the exception of the experiments recorded in Tables I. and XIII., where only one animal was used) and diluted 1 in 5, then filled into glass pipettes and heated in a water bath for 15 minutes at a temperature of 58° C. We found that more accurate estimations could be obtained by using the serum diluted to this extent than by using an undiluted serum. Two volumes of the diluted and heated serum were added to 2 volumes of washed corpuscles and 1 volume of B. typhosus emulsion, then carefully mixed and filled into glass pipettes and incubated at 37° C. for 15 minutes. When taken out of the incubator the contents of the pipettes were again mixed and films prepared and stained in the usual way, and 50 polymorphonuclear corpuscles were counted. In addition to these blood tests, the rabbits and guinea-pigs inoculated were subjected to a

[illegible]

hours. Of this culture 5 cubic centimetres given intraperitoneally killed the control rabbits in 12 hours, and 0·75 cubic centimetre the control guinea-pigs in from 12 to 14

TABLE VII.—*Experiments on Guinea-pigs to Test the Immunising Properties of* Fresh Antityphoid Vaccine. *This vaccine was prepared on Dec. 21st, 1908, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heating employed. It contained 530,000,000 bacilli per cubic centimetre.*

No. of experiment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	[illegible]		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result.
		Bacilli.														
1	Jan. 21st, 1909.	0 2 c c.=106 000,000												1	Feb. 18th, 1909.	Survived; was never ill
	„ 29th, „	0 3 c c =159 000,000														
	Feb. 9th, „	0 5 c c =265,000,000	Jan. 28th, 1909.	+	+	−							0 66			
2	Jan 21st, „	0·2 c c =106,000,000	Feb 9th, „	+	+	+	+	±	−				8 5	1½	Feb 19th, 1909	„
	„ 29th, „	0 3 c c =159,000,000	„ 16th, „	+	+	+	+	+	+	+	+	±	8 1			
	Feb. 9th, „	0 5 c c =265,000,000	„ 19th, „	+	+	+	+	+	+	+	±	−	7 5			
Two control guinea-pigs.	*Nil.*	*Nil*	Jan. 28th, „	+	±	−										
			Feb. 9th, „	+	±	−										
			„ 16th, „	+	±	−										
			„ 19th, „	+	±	−										

TABLE VIII.—*Showing the Result of Widal's Reaction and Opsonic Tests carried out with the Pooled Sera of Three Men* [illegible] Vaccine. *This vaccine was prepared on Nov. 7th, 1906, from a 48 hours broth culture.* [illegible] *5 per cent. carbolic acid. No heat employed. It contained 535,000,000 bacilli per*

Name	Date of inoculation of vaccine.	Quantity of vaccine used	Date of examination of pooled sera.	Agglutination response of serum and dilutions used.									Opsonic index.
				10	20	40	80	160	320	640	1280	2560	
W. A. P.	Feb. 10th, 1909.	0 5 c c. = 267,500,000 bacilli	Feb 10th. Before inoculation	+	±	−							0 9
	„ 20th, „	1 0 c c. = 535,000,000 „	„ 20th. 10 days after first inoculation	+	+	+	+	+	+	+	+	−	2 1
L. T.	„ 10th, „	0 5 c.c. = 267,500,000 „	March 1st. 9 days after second inoculation.	+	+	+	+	+	+	+	+	±	2 5
	„ 20th, „	1 0 c c. = 535,000,000 „	„ 5th 13 days after second inoculation.	+	+	+	+	+	+	+	+	±	2 8
H. B.	„ 10th, „	0 5 c c. = 267,500,000 „											
	„ 20th, „	1·0 c.c. = 535,000,000 „											

TABLE IX.—*Showing the Result of Widal's Reaction and Opsonic Tests carried out with the Pooled Sera of Three Men Inoculated with a* Fresh Antityphoid Vaccine. *This vaccine was prepared on Dec. 21st, 1908, from a 48 hours broth culture. It was sterilised by the addition of 0·5 per cent. carbolic acid. No heat employed. It contained 530,000,000 bacilli per cubic centimetre.*

Name.	Date of inoculation of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Agglutination response of serum and dilutions used									Opsonic index.
				10	20	40	80	160	320	640	1280	2560	
A. H.	Feb 10th, 1909.	0 5 c c = 265,000,000 bacilli	Feb 10th. Before inoculation.	+	±	−							0·9
	„ 20th, „	1 0 c c = 530,000,000 „	„ 20th 10 days after first inoculation	+	+	+	+	+	+	+	+	−	2 2
J. C. B.	„ 10th, „	0 5 c c = 265,000,000 „	March 1st 9 days after second inoculation.	+	+	+	+	+	+	+	+	±	2·56
	„ 20th, „	1 0 c c = 530,000,000 „	„ 5th. 13 days after second inoculation.	+	+	+	+	+	+	+	+	±	3·0
F. C. C	„ 10th, „	0 5 c c. = 265,000,000 „											
	„ 20th, „	1·0 c c = 530,000,000 „											

[illegible] immunised with the [illegible] addition of 0·5 per [illegible] of heat were able to survive one and a half lethal doses of the test typhoid culture given intraperitoneally without showing any apparent symptoms, but that none of them were able to withstand two lethal doses.

On reference to the opsonic and agglutination tables numbered I. to VII. (inclusive) and Charts 1 and 2 it will be seen that the opsonins and agglutinins are increased to practically the same extent whether we use a vaccine over two years old or a vaccine freshly prepared, provided that in both cases sterilisation has been carried out by means of carbolic acid only.

It is evident from these results and also from the results recorded in the Tables numbered VIII. and IX. and Charts 3 and 4 that an antityphoid vaccine sterilised by the addition of 0·5 per cent. carbolic acid and without any previous heating retains its immunising properties unimpaired for a period of two years at least In the Tables numbered X, XI., XII., and Charts 5 and 6, where a comparison is drawn between old and freshly prepared vaccines sterilised by means of a double process, viz., heating to 60° C. for 20 minutes, and the subsequent addition of 0·5 per cent. carbolic acid, it will be seen that the heated and carbolised vaccine has lost considerably in its immunising properties after two years, but that a fresh vaccine similarly prepared, although evidently efficient in producing a high degree of immunity, is not quite so efficient as an unheated vaccine.

Table XIII. and its accompanying chart (No. 7) demonstrate that a vaccine sterilised by heating for one hour at a temperature of 53° C., and the subsequent addition of 0·25 per cent. lysol (Leishman's method), produces a slightly higher response (as judged by the blood changes, but not by the effects of lethal doses) than a freshly prepared vaccine sterilised by heating for 20 minutes at 60° C., and the subsequent addition of 0·5 per cent. carbolic acid. Leishman,[2] however, states that the keeping properties of a vaccine prepared by this method cannot be relied upon for longer than three months. We are unable for the present to make any experiments on this point on account of not having an old vaccine sterilised by this method.

None of the rabbits immunised with a heated vaccine were able to survive the intraperitoneal inoculation of one and a half lethal doses of the test typhoid culture, but those

TABLE X.—*Experiments on Rabbits to Test the Immunising Properties of an* Old Antityphoid Vaccine. *This vaccine was prepared on Nov. 24th, 1906, from a 48 hours broth culture. It was sterilised by heating for 20 minutes at 60° C. and the subsequent addition of 0 5 per cent. carbolic acid. It contained 420,000,000 bacilli per cubic centimetre.*

No. of experiment.	Date of injection of vaccine.	Quantity of vaccine used.	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	Effc o typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra-peritoneal injection.	Result
1	March 8th, 1909.	84,000,000 bacilli.	March 8th, 1909, before inoculation.	±	–								1·0	1	April 12th, 1909.	Died April 13th
	,, 18th, ,,	126,000,000 ,,	March 17th, 1909.	+	+	±							1·33			
	,, 29th, ,,	210,000,000 ,,	,, 23rd, ,,	+	+	+	+	±					1 8			
2	,, 8th, ,,	84,000,000 ,,	,, 27th, ,,	+	+	+	+	–					1 2	1½	April 14th, 1909.	Died April 15th
	,, 18th, ,,	126,000,000 ,,	April 2nd, ,,	+	+	+	+	±					1·9			
	,, 29th, ,,	210,000,000 ,,	,, 8th, ,,	+	+	+	±						1·7			
Two control rabbits.			March 8th, ,,	±	–											
			,, 17th, ,,	±	–											
			,, 23rd, ,,	±	-											
			,, 27th, ,,	±	–											
			April 2nd, ,,	±	–											
			,, 8th, ,,	±	–											

TABLE XI.—*Experiments on Rabbits to Test the Immunising Properties of* Fresh Antityphoid Vaccine. *This vaccine was prepared on March 7th, 1909, from a 48 hours broth culture. It was sterilised by heating for 20 minutes at a temperature of 60° C. and the subsequent addition of 0 5 per cent. carbolic acid It contained 500,000,000 bacilli per cubic centimetre*

No of experiment.	Date of injection of vaccine	Quantity of vaccine used	Date of examination of pooled sera.	Widal's reaction and dilutions used.									Opsonic index.	Effects of the intraperitoneal injection of a virulent strain of B typhosus recently isolated from a case of typhoid fever.		
				10	20	40	80	160	320	640	1280	2560		No. of doses lethal in 12 hours.	Date of intra peritoneal injection	Result
1	March 8th, 1909.	84,000 000 bacilli	March 8th, 1909, before inoculation.	±	-								1 0	1	April 12th, 1909.	Survived, was never ill
	,, 18th, ,,	126,000,000 ,,	March 17th, 1909.	+	+	+	+	+	±				5 66			
	,, 29th, ,,	210,000,000 ,,	,, 23rd, ,,	+	+	+	+	+	+	±			4 0			
2	,, 8th, ,,	84,000,000 ,,	,, 27th, ,,	+	+	+	+	+	+	–			2 6	1½	April 14th, 1909.	Died April 17th
	,, 18th, ,,	126,000,000 ,,	April 2nd, ,,	+	+	+	+	+	+	–			4 6			
	,, 29th, ,,	210,000,000 ,,	,, 8th, ,,	+	+	+	+	+	±				6 0			
Two control rabbits.			March 8th, ,,	±	–											
			,, 17th, ,,	±	–											
			,, 23rd, ,,	±	–											
			,, 27th, ,,	±	–											
			April 2nd, ,,	±	–											
			,, 8th, ,,	±	–											

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[2] Leishman, Harrison Grattan, Webb, and Kennedy: Journal of the R.A.M.C., October, 1908.

immunised with a freshly prepared heated vaccine survived one lethal dose When an old heated vaccine was used one lethal dose of the test culture proved fatal in one case but not in a second animal similarly immunised

It would appear from these experiments that sterilising a vaccine by means of heat diminishes its immunising properties, even though the vaccine be used when quite fresh, and it would also appear that heat has a marked effect in curtailing its keeping properties On the other hand, when sterilisation is carried out by adding 0 5 per cent carbolic acid only, no harmful effects are produced, and the vaccine retains its properties unimpaired for two years at least

It may be mentioned that one of us (D S) has prepared and used a staphylococcus vaccine, sterilised by the addition of 0·5 per cent. carbolic acid only, and with results in every way satisfactory. In dispensing with the aid of heat in sterilising a staphylococcus vaccine it would be safer to allow 48 hours to elapse before testing for sterility. Experience has proved that some strains of staphylococci resist 0·5 per cent carbolic acid longer than typhoid bacilli The principle here enunciated would apply to all bacterial vaccines now in use In the case of vaccines prepared from bacteria associated [illegible]
cases of st[illegible]
increased [illegible]
harmful effects either to the patient or the vaccine, but as a matter of fact considerably less than 1 per cent. would suffice

TABLE XII —*Experiments on Rabbits to Test the Immunising Properties of an* Old Antityphoid Vaccine *This vaccine was prepared on Nov 24th, 1906, from a 48 hours broth culture It was sterilised by heating for 20 minutes at 60° C, and the subsequent addition of 0 5 per cent carbolic acid It contained 420,000,000 bacilli per cubic centimetre*

No of experiment	Date of injection of vaccine	Quantity of vaccine used	Date of examination of serum	Widal's reaction and dilutions used									Opsonic index	[illegible]		
				10	20	40	80	160	320	640	1280	2560		No of doses lethal in 12 hours	Date of intra peritoneal injection	Result
1	April 5th 1909	84 000 000 bacilli	April 11th 1909	+	+	-							1	1	May 10th, 1909	Survived was not ill
	,, 15th, ,,	126 000 000 ,,	, 15th ,,	+	+	+							1 4			
	,, 25th, ,,	210 000 000 ,,	, 22nd, ,	+	+	+	+	±					1 5			
			,, 25th, ,,	+	+	+	+	-					1 7			
			May 4th, ,	+	+	+	+	+	±				2 5			
			,, 7th ,	+	+	+	+	+	-							
Control rabbit			April 11th, ,	±	-											
			, 15th ,	±	-											
			,, 22nd, ,,	±	-											
			,, 25th, ,,	±	-											
			May 4th ,	±	-											
			,, 7th, ,,	±	-											

TABLE XIII —*Experiments on Rabbits to Test the Immunising Properties of* Fresh Antityphoid Vaccine *This vaccine was prepared on March 7th, 1909, from a 48 hours broth culture It was sterilised by heating for one hour at 58° C and the subsequent addition of 0 25 per cent lysol It contained 500,000,000 bacilli per cubic centimetre*

No of experiment	Date of injection of vaccine	Quantity of vaccine used	Date of examination of pooled sera	Widal's reaction and dilutions used.									Opsonic index	Effects of the [illegible]		
				10	20	40	80	160	320	640	1280	2560		No of doses lethal in 12 hours	Date of intra peritoneal injection	Result
1	March 8th, 1009	84 000 000 bacilli	March 8th 1909 before inoculation	±	-								1 0	1	April 12th, 1909	Survived was never ill
	,, 18th, ,,	126 000 000 ,,	March 17th, 1909	+	+	+	+	+	+	±			5 5			
	,, 29th, ,,	210 000 000 ,,	,, 23rd, ,,	+	+	+	+	+	+	±			4 6			
2	8th ,,	84 000,000 ,,	,, 27th, ,,	+	+	+	+	+	+	±			3 4	1½	April 14th, 1909	Died April 15th
	, 18th, ,,	126 000 000 ,,	April 2nd, ,,	+	+	+	+	+	+	+	±		6 8			
	, 29th ,,	210,000 000 ,,	,, 8th, ,,	+	+	+	+	+	+	±			6 7			
Two control rabbits			March 8th, ,	±	-											
			,, 17th, ,	±	-											
			,, 23rd, ,,	±	-											
			,, 27th ,	±	-											
			April 2nd, ,,	±	-											
			,, 8th, ,,	±	-											

Conclusions

I The sterilisation of antityphoid vaccine can be efficiently accomplished by the addition of 0·5 per cent. carbolic acid

II Heating a vaccine in order to sterilise it introduces a harmful and unnecessary element which acts in two ways: (1) it diminishes its immunising properties, and (2) it curtails its keeping properties In the experiments here recorded the [illegible]
[illegible] tion of
[illegible] operties
[illegible] by the

fact that animals and men treated with a two years old vaccine prepared by this method show the same blood changes as those treated with a fresh vaccine similarly prepared; and (2) by the fact that animals treated with a two years old vaccine prepared by this method withstand the same amount of a virulent typhoid culture when given intraperitoneally as those treated with a fresh vaccine similarly prepared.

IV. Animals inoculated with antityphoid vaccine sterilised by the addition of 0·5 per cent. carbolic acid attain a higher degree of immunity (as proved by blood changes and the resistance to lethal doses of a virulent typhoid culture) than similar animals inoculated with a vaccine sterilised by heat (60° C. for 20 minutes, or 53° C. for one hour) and the subsequent addition of an antiseptic (carbolic acid 0·5 per cent., or lysol 0·25 per cent.).

V. An antityphoid vaccine sterilised by heating for 20 minutes at a temperature of 60° C., and the subsequent addition of 0·5 per cent. carbolic acid has considerably deteriorated after being kept for two years, as proved by the blood changes, and effects of lethal doses of a virulent typhoid culture in animals inoculated with this vaccine.

VI. Pure carbolic acid to the extent of 0·5 per cent. appears to us to be the best agent with which to sterilise bacterial vaccines, and its general adoption would obviate any necessity for heating.

CONGENITAL, HEREDITARY, AND FAMILY HÆMATURIA.

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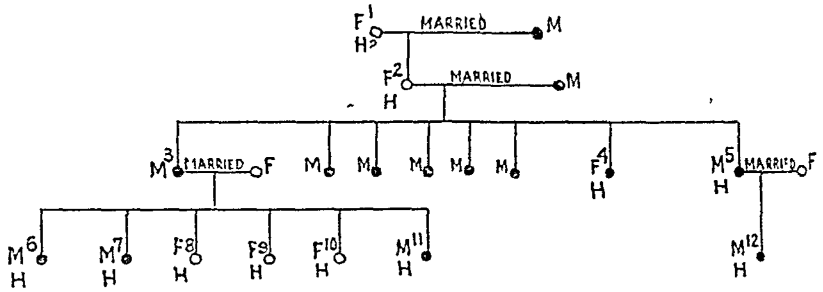
HEREDITARY hæmaturia appears to be a very rare condition. It was first described by Guthrie[1] in 1902 in a paper entitled "'Idiopathic,' or Congenital, Hereditary and Family Hæmaturia," in which he reported its occurrence in 12 members of one family. I have not been able to find any other reference to it in the literature. Atlee,[2] however, has reported "Three Cases of Recurrent Hæmaturia in One Family," which resemble very closely the cases under consideration, but in which there is no hereditary or congenital history.

The seven cases which are reported below are of one family which has been under my observation during the past seven years. So far as the history goes, the family is comprised in all of 17 persons, of whom 10 have suffered from hæmaturia. Testimony is conflicting as to whether the great-grandmother (No. 1 in the accompanying chart) had hæmaturia or not. She died at an advanced age from "senile decay" with dropsy. The great-grandfather was healthy. Their only child, a daughter (No. 2), had hæmaturia (according to the relatives), married, and had eight children (seven sons and one daughter), and died, aged 38 years, from "Addison's disease." Four of her sons died in infancy from an unknown cause; and one, aged 14 years, from an indefinite "brain trouble." There is no evidence of any of those having suffered from hæmaturia. The remaining three are alive. The eldest son, aged 31 years (No. 3), has not had hæmaturia, but his six children have all been hæmaturic; the second son (No. 5), aged 28 years, has suffered from hæmaturia, and his only child, aged 2 years, is also hæmaturic; and the daughter, aged 23 years (No. 4), unmarried, has hæmaturia. There is no history of hæmophilia, nor is there any rheumatic tendency in the family.

It is interesting to note that in this family the hæmaturia has been inherited, first, through the female side, and then on two occasions through the male side, in one case the transmitting male not being affected. In Guthrie's family inheritance was only through the females; and in Atlee's cases, though there is no reference to heredity, it is noted that the father died from uræmia.

The cases which have been under my observation are the granddaughter (No. 4) and the grandson's (No. 3) six children—i.e., the second and third affected generations. Four of the children, aged respectively 9, 5½, and 3½ years, and 11 months, are alive, and two are dead, one having died, aged 3 years, from acute nephritis with uræmia, and one aged 10 days, from broncho-pneumonia. All have suffered from hæmaturia. Their father is a strong healthy man, who has never had any illness, and the mother has had good health except for a transient hemiplegia following phlegmasia after childbirth. The following chart shows the relationships:—



H = Suffered from hæmaturia.

Guthrie based the diagnosis of his cases on the following points: the personal and family history, the occurrence of febrile exacerbations in which the hæmaturia far exceeds that of acute nephritis, the absence of œdema or dropsy and cardio-vascular changes, and the absence of all the well-known causes of hæmaturia, and my cases agree very closely with his description.

In all the six children the condition has probably been congenital. Two of them were noticed to pass blood-coloured urine during the first week of life; in three, blood was first observed at from 12 to 18 months, when the napkins were dispensed with; and in the sixth (aged 11 months), though to the eye the urine had a normal appearance, albumin was present and blood corpuscles microscopically in the first specimen obtained (at four months). In practically all the examinations I have made of these urines over a number of years blood has been present, usually giving the urine either a faint "smoky" or light red colour, with albumin often in excess of the blood. The children are also, with one exception, all subject to periodic febrile attacks occurring at irregular intervals, during which the quantity of blood passed is much increased. These attacks have always been attributed to catching cold or to digestive disturbance, though they sometimes occur without very evident cause. Any trifling cold, nasal or bronchial, is invariably followed by an attack, but diet has no such constant effect, though in three of the children the eating of vegetables or apples has very regularly produced it. Rhubarb,[3] black currants, strawberries,[4] &c., which have been reported as occasionally causing hæmaturia, have never given rise to an attack.

The exacerbation sets in suddenly, the child is feverish for a day or two and usually confined to bed, there is frequency of micturition, and sometimes enuresis, but never any complaint of pain. The child is well again by the third day as a rule, though occasionally the indisposition lasts from one to two weeks, or may be so slight that the child never misses school. During the attack the quantity of blood passed increases for a few days and then gradually lessens, and the urine regains its normal appearance by the end of the second or third week. Any general disturbance of the health at this time has invariably had the effect of prolonging the attack and increasing the quantity of blood (e.g., measles, whooping-cough, bronchitis), but exercise has no effect in this way, and the attacks are not more frequent or prolonged at one season than another. The quantity of urine passed daily in an attack is normal; the specific gravity is from 1015 to 1030, and the reaction neutral or acid. Albumin varies from 0·05 to 0·5 Esbach (to ¼ volume on boiling), and is in accordance with the blood present. The deposit, which is slight, contains many red blood corpuscles, abundant blood casts, an occasional hyaline cast, but no others; usually a few crystals of uric acid or of oxalates, and granular matter. There has never been œdema or dropsy at any time in any of the cases, nor pain on micturition, nor renal tenderness. The heart and vessels appear normal in all. None of them have suffered from scarlet fever, or rheumatism, or from gravel; and they have never shown any symptoms of scurvy, purpura, or Raynaud's disease. There is no history of other hæmorrhage in any of the cases. The other ordinary causes of hæmaturia (calculus, tubercle, syphilis, neoplasm, &c.) can be excluded.

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[1] L. G. Guthrie: THE LANCET, May 3rd, 1902, p. 1243.

[2] St. Bartholomew's Hospital Journal, 1901.

[3] T. D. Boyd: THE LANCET, Oct. 24th, 1891, p. 927.

[4] L. G. Guthrie: THE LANCET, May 3rd, 1902, p. 1245

and blood-vessels are normal and the kidneys are not palpable. The fundus oculi is normal. Blood (a week after attack): hæmoglobin, 75

day from broncho-pneumonia.

CASE 6.—A male, aged 11 months. Since birth the mother has

healthy.

CASE 7.—A female, aged 23 years, who has been under observation at short intervals for about a year. I have never seen her in an attack, but from her description it appears to be exactly like those of the children in onset and duration. She

at the age of 18 years, when she had

admits that she may have

exacerbations have recurred

attributed to catching cold,

in the back and limbs, and

during its course. All arti

neither lessens nor aggra

hæmorrhage from any other

for endometritis, and the

later, while still confined t

type. She has had no other illness. The heart, vessels, and fundus are normal. The urine, which has been examined frequently, but only in the intervals, is slightly "smoky" in appearance and of acid reaction; the specific gravity is from 1015 to 1020, albumin 0 05 to 0 1

les and a few blood casts are

; hæmoglobin, 70 per cent.;

llimetre; white corpuscles,

per cent.; and polymorphonuclears, 57 per cent.

Of the other affected members of the family—i.e., of the younger grandson (No. 5 on the chart), aged 28 years, and his son, aged two years—I have no personal knowledge. From his medical adviser I learn that he has attended the elder during an attack of hæmaturia like those already described, and since the condition of the other members of the family became known the relatives have observed typical attacks in the child.

There is no doubt that these cases are of the same nature as those described by Guthrie in the paper already referred to. He reported a family of 15 persons of two generations, of which 12 members suffered from hæmaturia. Of the first generation (five persons) two males and two females were affected and one female unaffected. The males died, aged respectively 4½ and 11 years, from unknown causes; the two affected females married and had families. The elder had seven children, of whom five suffered from hæmaturia (four females aged 18, 15, 13, and 10 years, and one male aged six years); the younger had three children, (two males aged eight and three years, and one female aged 11 years), all affected. The attacks in these cases were usually attributed to catching cold and were associated with slight bronchial catarrh, or with earache, toothache, or tonsillitis. In some, certain articles of diet seemed to provoke an attack (claret, black currants, asparagus, strawberries). The hæmaturia seemed to produce no ill effects in any of them.

The three cases of recurrent hæmaturia in one family described by Atlee are referred to by Guthrie, who considers them of the same nature as his own, despite the absence of a hereditary or congenital history. They were three females, aged 5½, 4½, and 2½ years, one of whom had four attacks in nine months.

Although the hæmaturia may persist for years without materially affecting the health, beyond causing a slight degree of anæmia after a prolonged attack, yet none of my patients could be called robust. In only one of these seven cases has the hæmaturia disappeared, and since then the child's general condition has noticeably improved.

Remarking on the prognosis of these cases, Guthrie says, "the condition does not seem to endanger life, or even health, as a general rule." On the other hand, the father of Atlee's three family cases died from uræmia, and although there is no history of his having suffered from hæmaturia the association is suggestive. One of my own cases, a female, aged five years, died from acute nephritis with uræmia, and this in itself has necessitated a very guarded prognosis for the other members of the family. The report of this case is of interest, as the nephritis developed during an exacerbation of the hæmaturia.

[illegible] the day following was blood-red in colour, acid, [illegible] and albumin measured 0·1 Esbach ($\frac{1}{12}$ volume). [illegible] *many blood corpuscles, blood casts, and some* crystals of oxalates. Under treatment there were no further convulsions, though on the next day there was marked carpo-pedal spasm; the temperature was 101° F. and the tongue was very white and dirty. On the 9th the temperature was normal and on the 10th the child was running about apparently well. On the 14th I was called to see her again. She had been in bed for two days, taking only milk; the temperature was 100°, *the tongue was furred, and the bowels* were constipated. She had a cough, and sibilant râles were present all over the lungs. There was no change in the [illegible] gradually worse, and on the 18th [illegible] perature was 100°, the tongue was [illegible] smelling. On the next day she [illegible] delirium at times, and occasionally [illegible] and limbs. She passed no urine fr[illegible] On the 20th she was semi conscious; the temperature was 102°, the pulse was 120, of distinctly high tension, and the tongue was dry. The knee-jerks and superficial reflexes were exaggerated, Kernig's sign was present, and there was carpo-pedal spasm. The pupils were widely dilated, equal, and reacted sluggishly. The urine was blood-red in colour, of specific gravity 1032, acid, and had a copious deposit. *Albumin measured* 0·4 *Esbach* (¼ *volume*), *and* microscopically there were many blood corpuscles, blood casts, and abundant epithelial casts and epithelium. During the next three days the condition remained unchanged, despite treatment On account of enuresis the urine could not be measured, but was certainly less than normal. When conscious she complained of headache, there were frequent muscular twitchings and deviation of eyes and head to the right, and nystagmus was present. *Periods of consciousness, when the child drank greedily* and seemed better, were succeeded by periods of delirium, deepening to coma on the 23rd, when she died. The temperature (morning and evening) during the last four days varied from 102° to 103°, and the pulse was from 120 to 130 per minute and of high tension. On the day of death a [illegible] eruption appeared on the abdomen, legs, feet, [illegible] hands. The urine during the last four days [illegible] *of blood, epithelial, and granular casts, and* [illegible] 0·5 to 0·8 Esbach. There was no œdema or dropsy during the illness. A necropsy was refused.

In the absence of any post-mortem record, it must be uncertain whether these cases of hereditary hæmaturia are of vaso-motor origin,[5] or are due to structural changes in the renal vessels or tissues.[6] That the hæmaturia appears to be congenital and persistent, and that in the case above reported the symptoms of nephritis developed, seems to point to the latter suggestion rather than to the former.

Kilmarnock, N.B.

THE GENESIS OF THE MODERN INFIRMARY.[1]

BY F. S. TOOGOOD, M.D. LOND., D.P.H.,
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FROM amidst the universal chorus of condemnation which arose when the report of the Royal Commission on the Poor Laws was issued there has been very little either said or written against the medical side of the service. There are many of us who remember how matters stood 25 years ago, and some of us have been told by our predecessors of the condition of affairs as they found them on their first acquaintance with Poor-law. Even those who are shouting most vehemently against the present order of things have, I notice, little in their condemnation which is derogatory to the medical work in which we are all so much interested. Truly we are not greatly praised, but after an experience of decades of professional aloofness and public apathy one has ceased to expect decoration or official recognition for services which for single-heartedness and devotion will bear comparison with those given in any other branch of civil service. Poor-law has ever been the Cinderella of the services, and the immense improvements which have taken place in the last fifty years have been effected by the medical officers themselves fighting, usually single-handed, against a hostile authority, and with superior officialdom unable to extend any effective support. I have no hesitation whatever in saying that the arrangements of a modern infirmary compare favourably with those existing at a general hospital; and certainly both for humanity and effectiveness the out-door Poor-law medical service is superior to the out-patient departments of our voluntary charities. Our service has nearly worked out its own salvation, and I see danger both to the community and to the medical profession as a whole if many of the suggested alterations receive the sanction of the public.

In the old days before the separation of the infirmary from the workhouse there was abundant scope for improvement in the treatment of the sick, but it must not be forgotten that even then things were little better in the general hospitals. There were no trained nurses. There were a certain number of poorly educated women who had drifted into sick-nursing generally because they had failed in other walks of life. There was no regular service of nursing as we understand it to-day. The higher female officials who held positions corresponding to the matrons, assistant matrons, and nursing superintendents of to-day were usually the inadequately provided-for widows of defunct local professional men or superior tradesmen. I have had it from an eye-witness that the night nurses of one of the most renowned hospitals in the United Kingdom habitually had wash-tubs in the ward and were responsible for the cleansing of a considerable portion of the hospital linen. With such a condition in the institutions which set the tone, what was to be expected of less favoured establishments?

The sick wards being part of the workhouse were necessarily under the jurisdiction of the workhouse master; he has been immortalised as Mr. Bumble, and the species is far from extinct, although education and a more enlightened policy on the part of electing boards have relegated him in great measure to the more inaccessible parts of the country. For a layman to be in supreme authority in an institution devoted to professional uses it is necessary, if chaos is to be averted, that both the layman and the professional element should be highly educated gentlefolk, endowed with absolute control over their tempers and possessing the power of appreciating and respecting the most delicate feelings of others. I have never yet found this happy combination of good qualities; and quite apart from the inherent absurdity of placing an uneducated person in a position where he was enabled to control men and women of superior education and attainments, there was an essential difference in their points of view, the one regarding every inmate or patient as someone to be "repressed," while the humanitarian training of the other had taught him to regard every sufferer as a fellow-being entitled to his respect, for whom it was his duty to put forth his whole power that he might cure him if possible, and at least give him comfort and peace.

The buildings were ill adapted for purposes of treatment; they were designed by architects whose ideas were actuated by the requirements of an eight-roomed house and who had no medical assistance to indicate what was required. Small wards, badly lighted with small inaccessible windows, apparently designed with the idea of preventing a patient leaving the building in an unconventional manner; fireplaces which would have efficiently adorned an artisan's best parlour; with the ward kitchen usually forgotten and the lavatory treated with the æsthetic consideration which demands that it should be made as difficult as possible of observation and therefore of access. The shell of the building was as a rule remarkably good and therefore adaptation to modern requirements has been found in some measure possible. The nursing arrangements were to our present notions deplorable. There were a few paid female attendants devoid of any trained knowledge of nursing and always too old and too engrooved to be capable of assimilating more than a rule-of-thumb method of instruction. As each of these women often had 100 sick persons under her care she neither could nor did perform any of the actual offices of nursing which were entrusted to old pauper women often imbecile, usually senile, and always worthless. Invariably a very heavy toll was levied upon any stimulant or delicacy ordered, while both patients and pauper nurses would save their brandy or whisky until visiting day and then have a grand carousal with their friends. So little real attention or inspection was bestowed upon patients that one woman successfully simulated paralysis for years; her affectation of piety rendered her an object of great interest to many benevolent visiting ladies, who showed their sympathy by giving her presents of sugar, tea, and snuff. These she hid in her flock bed. A freshly appointed medical officer, whose new broom was sweeping cleanly, earned an unsympathetic notoriety by insisting upon getting her out of bed, when many pounds of dry goods were found as well as several nests of mice. The patient recovered the use of her legs, which the nurses knew she had never lost, as she was often seen walking about at night, but such was the local belief in her sanctity that they were afraid to hint at the imposture.

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[5] See Debaireux: Clinical Journal, Feb. 22nd, 1899; Bryant: Clinical Journal, July 25th, 1900.

[6] See Fenwick: Clinical Cystoscopy, 1904; Cabot: American Journal of the Medical Sciences, 1909.

[1] A paper read at the annual meeting of the Poor-law Medical Officers' Association of England and Wales held at the Guildhall, London, on July 6th, 1909.

The children under the old state of things probably suffered more than any other class. Left to the mercy of hags who drank their milk and grossly neglected them, their hold on life was rendered more precarious by the difficulty which the medical officer experienced in getting his orders duly executed. It will appear almost inconceivable that milk prescribed by the doctor was refused by the master and in some instances flour and water substituted. Representation to the board of guardians proving futile, one medical officer, the late Dr. D. M. Forbes, who related the circumstances to me, conceived the idea of refusing a certificate of death in every case where his instructions had not been faithfully carried out. The coroner zealously supported the efforts of the doctor, and the publicity so roused public opinion that the separation of the sick wards from the dominion of the master speedily resulted. Unfortunately lessons dearly bought are soon forgotten and quite recently the chairman of a powerful public authority in evidence before a commission advocated a return to lay superintendence. The reason is obvious: lay superintendence is naturally subservient to the authority of a board, its opinion is isolated and carries merely its own weight, whereas professional superintendence is dominant and compelling, and has behind it the power of a great organisation and cannot be lightly neglected. Fifty years ago the battle for the welfare of the patient was fought and won; if, unfortunately, it should become necessary to fight again I have no doubt either that the man will be forthcoming or that the victory will be ours. In the midst of strife and contention it is well to be able to appreciate the humorous aspect of the situation. Dr. Forbes used to relate the following circumstance with great relish. At a time when relations between himself and the workhouse master were strained, the latter used to take every opportunity of making the doctor's life uncomfortable, and one of his tricks was that of disturbing his rest by needlessly calling him up at night. This needed collusion with the attendant upon night duty, which in this instance was forthcoming. Night after night, and many times in each night the unfortunate doctor was roused from his bed to see patients who obviously [illegible] It was impossible to complain the [illegible] advice of the doctor was necessary, it was obviously impossible for him to resent it openly. Had the board been friendly it could not interfere with the discretion of an officer expressly charged with the duty of looking after sick at night, and in this case the board was the reverse of friendly. The canny Scot, however, gauged the situation. He saw that he must make the process of calling him involve discomfort to the master and attendant as well as to himself. At first, therefore, he ordered for every suitable case beaten-up eggs; this necessitated the master being roused to go to his stores and also gave the attendant the job of manipulating the eggs to the required consistency. This answered for a time, but not for long, as the enemy forestalled him by preparing ammunition in the day-time. A renewal of the disturbance was met by the prescribing of brandy; this was successful inasmuch as the master was compelled to rise for each portion ordered, as he could not trust it in bulk to the attendant, but from an unforeseen reason it defeated its object, for when the patients found that being suddenly taken ill at night meant brandy, a large number of adventurous spirits speedily and frequently developed alarming symptoms The next move was, however, final and decisive; it consisted in ordering crushed ice poultices. Now there was only one ice chest and that was in the basement far from the master's bedroom, the process of crushing ice is laborious, and the wearing of an ice poultice is not eagerly sought for. Hence the final victory remained with the medical man.

To persons unaccustomed to institution life this may seem rather "small beer," but I introduce it merely as one illustration of the many circumstances which render it imperative that establishments for the treatment of the sick should be under medical control. Half a century ago the professional education of a medical man was not to be compared with that demanded of him to-day. Hence the cases, both medical and surgical, found in workhouse sick wards were quite ordinary in character, mainly those incidental to childhood and old age occurring amongst the inmates of the workhouse Patients needing surgical operations were transferred to the nearest hospital, and necessarily so because, even if the medical officer had the requisite skill and experience, the appliances and nursing were lacking. The medical officer's contract frequently stipulated that he should supply drugs and surgical instruments, and this for a salary which was invariably beggarly in amount Even in those instances where the guardians were responsible for supplying materials the hospital idea had not yet evolved itself, and sick wards contained merely inmates of the workhouse who were out of health and required some special attention and diet. But with the separation of the sick wards from the ordinary workhouse administration, which resulted in the establishment of separate infirmaries, a gradual transformation was commenced which has progressed until to-day the best of our London infirmaries are clinically equal to any of the general hospitals. The evolution was somewhat slow, for many changes were necessary and the needful combinations required time to eventuate. Firstly, it was requisite that the doctor appointed should have had special institution training; the power to govern a large staff successfully is only acquired by years of experience, and a good administrator must be caught young and must grow up in the atmosphere. Those superintendents who have failed as administrators, and who have incidentally been cited as examples of medical inability to govern, have been men who have been unwisely translated from general practice without having served the needful and essential apprenticeship. Naturally it took some years to create a supply of these trained men. The nursing staff slowly grew into proficiency. There was at first little to attract desirable women to the service of an infirmary. The workhouse associations were still strongly in the public mind. It was not yet considered essential that the matron should be a trained nurse, and as the appointing authority usually elected a local female whose indigence was her chief qualification, she was usually a very indifferent housekeeper. It was obviously impossible to expect trained nurses to serve under a woman with no training, so the best class of nurse was never forthcoming even as head nurses, while for assistant nurses the flotsam and jetsam from fever hospitals, failures from general hospitals, and ward maids with some smattering of knowledge alone were available.

Marylebone Infirmary initiated a system whereby women known as "Nightingale nurses," having received a year's training at St. Thomas's Hospital, were transferred to Marylebone Infirmary to complete their professional pupilage. The Workhouse Nursing Association, now, I believe, defunct, supplied some infirmaries with young women who had received a year's training in nursing at some medical institution. Those infirmaries who availed themselves of this supply were enabled to tide over a difficult period of their history, but the condition of dual authority which the arrangement involved did not work well in practice, and the infirmary authorities one after the other secured their nursing staff by establishing a training school for nurses and by granting certificates for proficiency in nursing. The confidence of the medical profession and the public in the infirmary was growing. The increase in the number of admissions necessitated the appointment of additional medical officers, at first one assistant, but latterly in most infirmaries there are two, and in some, where additional duties have been placed upon the administration, further medical officers have been sanctioned. The constant succession of young practitioners fresh from hospital has been useful in keeping up a spirit of modernity where otherwise there would have been a tendency to stagnation. Undoubtedly in the earlier appointments of medical superintendents the posts were not filled by the best men obtainable—local interests were allowed to predominate; but in recent years there has been no lack of first-rate candidates and little fault could be found with the local boards in their ultimate selection. With the institutions staffed by conscientious and capable men, with trained nurses appointed as matrons, and with young well-educated women as nurses, the tone of the institutions changed vastly for the better, and as a consequence the class of person admitted as patients included many who could not rightfully be designated paupers, and insensibly the stigma of pauperism has detached itself from the infirmaries.

There are two circumstances which determine the character of an infirmary: firstly, the presence or absence in the neighbourhood of a general hospital; and secondly, the energy and ability of the infirmary medical staff. Some districts are abundantly served by general hospitals, and there the infirmary patients will be found to consist mainly of persons suffering from chronic and incurable diseases; there will be few acute cases and little or no surgery; whilst the social status of the majority will more closely approximate to that of the ordinary workhouse inmate. But in a district remote from a general hospital, especially if the infirmary medical staff be keen, the local medical practitioners and the general public speedily discover that all emergencies can be dealt with in the local institution and soon the patients, both in social status and in the nature of their diseases, can scarcely be differentiated from those of a general hospital. Curiously enough, the better the class of patient the less are the individuals affected by whatever stigma of pauperism there is remaining. Two circumstances appeal largely to the patients. Firstly, the fact that the infirmary is near to the homes of their friends, and therefore they can be visited easily, frequently and with little expense; and, secondly, the restfulness of the infirmary wards. The patients in a general hospital—I am speaking of those to which a medical school is attached—are naturally objects of interest from a clinical point of view, and the larger the numbers of the staff and the students, the greater is the amount of time spent in examination of the patient; consequently a really interesting "case" becomes speedily "fed up" with the amount of attention bestowed upon him by enthusiastic investigators. The continuous examination, although often grateful to the patient at first, is speedily regarded with aversion, a feeling which is sometimes vented upon some unlucky student who has the ill-luck to have the case allotted to him for examination purposes.

It has been stated that there is a wealth of material in infirmary wards which ought to be utilised for research and for teaching purposes. It is a mistake to suppose that infirmaries contain cases which are not to be seen in general hospitals; this is not so. In my long experience I have seen no cases which I had not previously seen as a student at University College Hospital, either in the wards or in the out-patient department. Certainly, we see the end of many cases which the hospitals are unable to retain, and we often devote years of attention to surgical cases which leave general hospitals as "cures." So far as research is concerned, the pages of the medical press and the proceedings of the various societies bear witness to the interest which the infirmary medical staff takes in unusual conditions of disease, and permission is never refused to genuine investigators who desire to prosecute inquiries in definite directions.

As to teaching, I am not aware of any real demand. I know, of course, that there are many medical men, whose ambitions exceed their opportunities, who would like to have the run of infirmary wards. It must be remembered that the primary object of an infirmary is to provide treatment for the sick poor, and that there has been no genuine demand for the utilisation of the infirmaries as teaching centres, the reason being that for various well-recognised causes there is a comparative shortage in the number of London medical students, and that for some years past there has been barely a sufficient number to carry on the necessary work of the general hospitals. When a demand for teaching really arises the medical staff of the infirmaries will be found sufficiently keen to undertake the work. The relatively large number of pathological examinations made is an evidence of the interest taken by the staff in their work.

Nor only are the infirmaries responsible for all the work usually undertaken by general hospitals, but they have in addition to provide accommodation for those infectious diseases which are not admitted into the hospitals of the Metropolitan Asylums Board. The latter authority deals with scarlet fever, diphtheria, enteric fever, small-pox, and probably with cerebro-spinal meningitis and typhus fever, leaving to the Poor-law guardians the care of measles, chicken-pox, whooping-cough, erysipelas, and puerperal fever. It is not at all an uncommon thing for an infirmary to have 40 or 50 cases of measles for which room has to be found.

Some of the best work of the service has been performed in the treatment of the mentally affected. So far back as 1891 I advocated and carried out the detention of all cases of lunacy for the full statutory period of 17 days before passing them on to an asylum; this has now become a general practice and roughly one-third of the total admissions to the mental wards require transference to an asylum. The agitation of the London County Council for receiving houses was entirely uncalled for, the work was already in being, and the good effects for which they hoped had already been achieved. This was abundantly recognised by the Royal Commission appointed to consider the working of the lunacy laws. With few exceptions, properly equipped mental blocks exist in all London unions and the small percentage of cases ultimately confined in asylums is a striking evidence of the success of the treatment.

In view of the remarks of the Minority Report of the Royal Commission I feel I must notice the work of the lying-in wards. The infantile mortality-rate has been compared unfavourably with that obtaining at certain lying-in hospitals. In order to make a fair comparison similar conditions must prevail in the institutions compared. I am informed that in the special lying-in hospitals of London the patients are mainly married women of undoubted respectability and therefore may fairly be called "picked cases." The admissions to a Poor-law lying-in ward include many of the most unfavourable type. Prostitutes rotten with disease, girls who have fallen and who have run the whole gamut of misery from shame and exposure before seeking admission, and who have usually exhausted every available means of terminating the pregnancy, not excluding mechanical interference. A considerable proportion of our cases are primiparæ, and in this district many are sent in by the outside doctors because it is known or anticipated that the labour will be difficult. Now all this information could have been obtained in an exact form by the Commission had it been so minded; certainly its deliberations do not appear to have been characterised by undue haste, and yet a most damaging statement has been issued and widely copied, supported by statistics which are partial and misleading. One-third of the unions are left out altogether and the amazing assumption is made that the children who leave the workhouse or infirmary will die at the same rate as those who remain. A frequent reason for the continued presence of mother and child is the weakly condition of the latter. It is also no uncommon thing for mother and child to leave the lying-in wards at the end of the customary three weeks in perfect condition. The mother returns to her work and the baby is placed out to nurse. It happens frequently that in a few days the child is readmitted to the infirmary in a moribund condition, wofully neglected, and dying from improper feeding. Many of the mothers and babies are transferred to the workhouse, where the former are placed upon a liberal diet, and although apportioned some task either of washing or cleaning, yet the care of the child is regarded by the authorities as the first demand upon the mother. There is, however, no power to prevent her from taking her discharge whenever she thinks fit to do so, and the result usually is that she drags the unfortunate baby about from early morning till late at night with no means of attending to the cleanliness of the child or of supplying it with food. Its condition on their return is deplorable, soaking in filth and inflamed and excoriated to such a degree that weeks of care are required to nurse it back to health, while the wholly improper food taken on these excursions often starts an enteritis which terminates fatally in a few days. I have known a woman give a three months' old baby a meal of beer and boiled French beans from the effects of which the child died. Where the authorities have so little power, is it playing the game to saddle them with the responsibility for affairs over which they have no control?

To return to the consideration of infirmary work proper, I find that there were in the metropolis 26 infirmaries containing 14,863 beds treating 79,111 patients in 1908, employing 1756 nurses and performing over 3500 operations annually under anæsthetics. The number of operations varies greatly, ranging from 12 to over 600. Locality has much to do with the variations in numbers, but the policy of the board of guardians and the inclination of the medical staff are not without their influence. Whilst I am exceedingly proud of the good work which is being done by the numerically small staffs of our infirmaries, I may perhaps be allowed to indicate in what direction improvements might be effected. I see no reason for mixing us up with the sanitary authorities, whose experience of clinical medicine and surgery terminated with the acquisition of an academic qualification and whose subsequent functions have been more clerical than clinical. The Tuberculosis Order of the Local Government Board suggests methods by which the health authorities may keep in touch with suitable cases after they have left the infirmary with a view to encouraging the patients to continue the exercise of those hygienic measures which they have learnt during their stay in the infirmary wards. London should be dealt with as a whole; the present areas are too small for effective treatment. This would give an opportunity for more economical dealing with disease by enabling some specialisation in treatment to be accomplished. The capacities of existing buildings and the capabilities of persons would then be more efficiently utilised than by the present system, which compels each building to accommodate every disease with the exception of those few for which the Metropolitan Asylums Board is responsible, and which assumes that the medical officers combine in their two, three, or four persons the tactile dexterity and potential energy of a full hospital staff. By judicious grouping considerable economies could be effected. Against this it must not be forgotten that the poor cannot travel great distances to visit their friends and that the transportation of patients for lengthy periods would mean the infliction of considerable hardships.

At present there is little or no coöperation between the outdoor and indoor medical staff, that is, between the district medical officers and the infirmary medical officers. About 15 years ago, in St. George-in-the-East parish, a whole-time medical officer was appointed to attend the outdoor sick poor in one of their more crowded districts; there was, however, no system of coöperation between the outdoor and the indoor staff and the arrangement soon reverted to the part-time district medical officer plan. In Lambeth, however, for some years past, the centrally situated districts have been ministered to by medical officers working from the infirmary under the supervision of the medical superintendent. By this arrangement the administration is made much more smooth. The home circumstances of the patients are known and the frequent discharges and re-admissions are avoided. Often a patient's physical condition [illegible] and [illegible] be [illegible] consequently the district medical officer sends him in again immediately. There being no channel of communication between the district medical officer and the infirmary, the one has no conception of the needs and difficulties of the other, hence there is the risk that they sometimes play at cross purposes. As matters stand the district medical officer has a distinct inducement to send patients to the infirmary, his visiting list is thereby depleted and his leisure is greater. The same argument may, I know, be used to the discomfiture of the indoor staff, but with less truth, as 10 or 20 patients more or less in a building make little difference. I regard the question of whole-time or part-time district medical officer as of little importance, but I think it essential that there should be a central point from which all the work should radiate and the infirmary would appear to be the proper headquarters. I believe a considerable economy in beds would be effected; any temporary overcrowding of the infirmary would be met by the [illegible] their own homes. This, through [illegible] is at present impossible. The [illegible] medical officer a stated salary, to include the provision of medical attendance and of medi- [illegible] and it [illegible] their [illegible] at the community is sweating the hard-worked, under-paid medical officer, who has to defend himself by any method open to him.

I have said nothing about the salaries of the infirmary medical officers, and I will now only suggest that I see no reason why the rate of pay should compare so unfavourably with that given to officers holding a similar position in the service of the Metropolitan Asylums Board and of the county asylums. Men who yearly each perform some 300 or 400 major operations are receiving salaries often only one-third, and never more than one-half, as large as those paid by the county boards. It seems to be inevitable that Poor-law officers should be themselves poorly paid. By a curious association of ideas it has come to be regarded as fit and proper that the repressive and deterrent methods which have so long prevailed in Poor-law should apply also to the treatment of officials. Some months ago the less expensive papers waxed indignant over the statement that the nurses of a Poor-law institution received an occasional pineapple as part of their rations. The confusion of ideas [illegible] three half-pence [illegible] the disheartening [illegible] a widely spread feeling that the circumstances of a Poor-law official should not form any strong contrast with those of the class for whose welfare he is responsible. The guardians themselves, or at any rate many of them, resent the circumstance of an official receiving a larger income than they themselves command. The Royal Commission quotes the remark, "He is our servant, and he gets more money than his master." If he succeed in convincing his immediate board that he is worthy of greater recompense his application has still to pass the custodians of the public purse at the Local Government Board, who appear to have a standard of payments based upon the idea that Poor-law medical officers have large private incomes and that this official work is undertaken by them as a recreation. It is most disheartening, after local opinion has recognised one's worth, to find that the report of one's fame has not penetrated into the corridors of Whitehall.

In conclusion, may I express the opinion that the Poor-law medical service does its work efficiently and at a very small cost to the community, and that whatever faults were found with the system by Dr. McVail exist with equal force in hospital and out-patient practice. Efficient supervision can only be secured in out-patient practice at an enormous cost. The medical officer's function is mainly advisory; he cannot compel his patient to follow his advice whether he be a pauper or a peer. Both reports of the Poor-law Commission appear to believe that by calling Poor-law by some other name and by transferring the work to some other authority they have changed the system, but beyond and behind this there are the personal characteristics of the people and the economic conditions from which society is suffering. These will not be altered by the changing of a name nor obliterated by transferring work to bodies devoid of experience.

Lewisham.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ACUTE PANCREATITIS WITH FAT NECROSIS.

BY F. W. GOYDER, M.B. CANTAB., F.R.C.S. ENG.,
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[illegible] was admitted into the Royal Infir- [illegible] week after the beginning [illegible] lth until after the birth [illegible] usly. Since this time she had occasional attacks of abdominal pain and vomiting, never being free for more than two months. The history of the present attack was vague; it began suddenly with abdominal pain. She vomited daily and her bowels were constipated until admission. There had been no jaundice and no injury. When admitted into the hospital she complained of epigastric pain, not severe or constant, and looked acutely ill, but with the appearance of previous good health. Examination was difficult owing to her fat. The abdomen was distended, slightly tender in the right loin, and more resistant on the right side than on the left. There was lack of resonance in the right upper quadrant, hyper-resonance elsewhere, and no iliac tenderness. The temperature was 98·8° F., the pulse was 100, and the respirations were 36. Leucocytosis was absent. During the next two days the distension varied, the bowels were moved, but vomiting of greenish fluid continued. After this the temperature rose, [illegible] the vomiting ceased, and the bowels [illegible] were light coloured, bulky, and offensive, with no obvious fat and only occasional curds. The patient's chief complaint was difficulty in breathing, which was worse at night. Her respirations became rapid, but there was no cyanosis. Dyspnœa varied with the distension. Up to the end of June this condition persisted; the temperature, always above normal, rose at times to 102°, with morning remissions often of 2°. Dulness and crepitations were heard over the bases of both lungs.

A diagnosis was made of abscess in the right loin, secondary perhaps to appendicitis. A needle introduced in the right loin withdrew a brownish fœtid fluid containing débris with a few acicular crystals, and no evident pus or blood. Her condition precluded extensive manipulation, but an incision into the loin was rewarded by the discovery of an extensive cavity containing similar fluid and cohesive brownish masses resembling blood clot. The œdema of the feet previously present disappeared temporarily after operation. The wound discharged the same kind of matter. Respiratory difficulties, increasing cardiac insufficiency, and general weakness resulted in her death six weeks after the onset of the illness. Throughout there was no jaundice; the stools, though pale, contained bile, and the urine a small quantity of albumin, but no sugar.

On post-mortem examination the thoracic cavity was much encroached on by the distended abdomen; the lungs were congested at the bases but not consolidated. The peritoneal cavity was normal. No spots of mesenteric fat necrosis were seen; the liver was large, soft, and fatty; the gall-bladder was thickened, unusually fixed, and contained many gall-stones. The ducts appeared to be free; the appendix was normal and the intestines without sign of lesion. Retroperitoneally, communicating with the sloughing operation wound, was an irregular cavity with necrotic walls. It was roughly H-shaped, the right-hand limb extending from the iliac crest, behind the liver, to the diaphragm, the connecting limb surrounding the pancreas, and the left limb lying behind the spleen and the descending colon. The pancreas was large, hard, and fibrous, without sign of hæmorrhage, the head densely adherent. The contents of the cavity were like those found at operation—they had neither the appearance nor the smell of an ordinary abscess. The odour, although unlike that of a bacillus coli infection, was no less offensive. I cannot describe it, but I should know it again.

If I am correct in my reading of the case, the following was the order of events: (1) gall-stones with one or more attacks of cholecystitis; (2) a secondary pancreatitis; (3) a pancreatic lesion causing escape of the secretion behind the peritoneum; and (4) retroperitoneal necrosis of the abundant fat in this region with formation of the tumour in the right loin.

The difficulty in the diagnosis of such cases is well known. An acute abdominal catastrophe is usually the most that can be made out in the severest cases; intestinal obstruction or appendicitis are commonly diagnosed. The unusual features in this case are the comparative lack of severity of the onset and the long course. Of the latter, however, Moynihan says: "Gangrene and diffuse suppuration are to be considered only as terminal phases, and not as special forms of acute inflammation of the pancreas."[1]

Bradford.

A CASE OF PURPURA HÆMORRHAGICA FOLLOWING THE USE OF FIBROLYSIN.

By S. Clifford Pritchard, M.D. Edin.

With a Note by Sir James Reid, Bart., G.C.V.O., K.C.B., M.D., F.R.C.P. Lond.

The patient, who was 69 years of age, complained of Dupuytren's contraction in both palms; in the left hand the condition was so advanced that the terminal phalanx of the ring finger touched the palm; in the right hand the affection was just commencing. It was decided to try to reduce the contractions by fibrolysin. The first injection of 2·3 cubic centimetres (as obtained in sealed glass tubes) was made on March 27th, and a second one on April 1st. It was repeated on April 5th, and then every third day until May 20th, making 18 injections in all. The palms were massaged every day. The condition slowly showed signs of improvement, the left especially becoming softer and less tied down. On May 19th there was a slight epistaxis, while on the 21st the patient had a slight bleeding from the gums and a few purpuric spots appeared on both legs. He was given calcium chloride (10 grains every four hours). On the 22nd the bleeding from the gums was rather more profuse, and there were more purpuric spots on the legs. On the following day the bleeding from the gums increased, there were more purpuric spots, and for the first time there was hæmaturia. Passing urine was also very painful. Calcium lactate (10 grains three times a day) was given as well as the calcium chloride. On the 24th, as all the symptoms continued, it was decided to give the patient a mixture containing perchloride of iron (7 minims every two hours), together with 30 grains of calcium chloride twice a day; an alum mouth-wash was also prescribed. On the 25th there was a slight improvement in the hæmaturia and also in the bleeding from the gums. The same mixtures were continued and hazeline was substituted for the alum in the mouth-wash. On the 26th a very great reduction of the bleeding both from the gums and in the urine took place, and on the following day the bleeding entirely stopped. The patient, who had taken only liquid food until now, was able to manage soft solids. The temperature had remained normal throughout, but the pulse, which at first was 72, had gradually increased to 90, but was quite regular. The arterial tension had been at first very high but gradually became less and was now a little below normal. On the 28th there was still no bleeding. A mixture containing nux vomica and nitro-hydrochloric acid was substituted for the perchloride of iron. The pulse remained good, but the patient was restless and seemed inclined to wander. On the 29th early in the morning the pulse became very irregular and occasionally intermittent, and from now onwards it gradually got weaker and faster, with short intervals during which it was quite regular and of good tension, until on the afternoon of the 30th death occurred.

Note by Sir James Reid.—This patient, whom I saw several times in consultation with Dr. Clifford, had for some years been the subject of glycosuria, as well as of occasional slight albuminuria. In January the amount of sugar present was found to vary from 1½ to 3½ grains per ounce and was kept under by a modified dietary. (When the injections began neither sugar nor albumin was present.) He also had a systolic aortic murmur, and for a year had been subject to occasional anginal attacks which came on only when he was walking, obliging him to stop, when they passed off. The exhibition of trinitrin, varied by sodium nitrite, had been followed by a reduction in the frequency and severity of these attacks. When the first purpura appeared the amount of sugar present in the urine was found to have risen to 8 grains per ounce, and the question arises whether the presence of sugar in the blood may have created a special vulnerability to fibrolysin, and whether there was any connexion between the injection of fibrolysin and the rise in the amount of sugar present.

A CASE OF TETANUS TREATED WITH ANTITOXIN; RECOVERY.

By Robert C. Pitt, M.R.C.S. Eng., L.R.C.P. Lond.,

SURGEON TO THE MALMESBURY COTTAGE HOSPITAL.

On April 8th a man, aged 42 years, came to see me and complained of stiffness in the jaw which he attributed to injuries he had received on March 18th whilst fighting with another man. He also had a small wound on the bridge of his nose which had practically healed. On the 11th I was sent for to see him and all he complained of was backache and stiff jaw. I saw him again on the following day, when definite signs of tetanus had developed. He complained of stiffness in his neck, back, and legs and "awful cramps."

On April 13th the patient was admitted to the Malmesbury Cottage Hospital, and on examination presented the following signs. The muscles of the jaw were stiff and rigid and fixed. The neck, back, and legs were absolutely rigid so that if his feet were raised he rested on the back of his head, and his abdominal muscles were as hard as a board. His pulse was not quickened nor his temperature raised. He was placed in a ward by himself, the room was darkened, and a nurse was in constant attendance. As much nourishment as he could possibly take was given him in the shape of concentrated meat-juices, milk, eggs, and stimulants which were passed through a fine tube into his mouth 30 cubic centimetres of antitoxin were injected into the skin of the abdomen on three consecutive days. The painful spasms were relieved by morphia and his constipation by aperients Three days after the third injection of antitoxin a [illegible] developed (antitoxin rash) On the 24th he was able to [illegible] his left knee. On the 26th he complained of great p[illegible] the bowels and had frequent diarrhœa which lasted two days. This was relieved by a large dose o[illegible] few drops of laudanum. On the 29th he [illegible] a [illegible] (the 30th) he was [illegible] The vomit was at [illegible] He was collapsed, his extremities were cold, the pulse was very rapid, and the temperature was subnormal. Nutrient enemata and stimulants were administered by the rectum. When I saw him the next morning the vomiting had ceased and I found [illegible]

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[1] Keen's Surgery, article on the Pancreas.

[illegible] incubation period and the very gradual onset; (2) the normal temperat[illegible] and (4) [illegible] was foll[illegible] obstructi[illegible] issue.

Malmesbury

Reviews and Notices of Books.

Special Hospitals: Their Origin, Development, and Relationship to Medical Education; their Economic Aspects and Relative Freedom from Abuse. By RICHARD KERSHAW. London: George Pulman and Sons, Limited. 1909. Pp 72. Price 2s. 6d.

Mr. Kershaw, who is the secretary of the Central London Throat and Ear Hospital, is naturally a warm advocate for special hospitals, and his unassuming little monograph certainly pleads their cause with eloquence. He commences by giving some historical instances of specialism, referring, of course, to the famous passage in the second book of Herodotus about specialism in Egypt. In places Mr. Kershaw is led into looseness of expression, as, for instance, on p 20, where he says, "In the fifteenth and sixteenth centuries, the renaissance of medical science led to the establishment of universities and to the foundation of medical corporations," as if neither of these bodies had existed previously. Now all the great European universities were founded long prior to the fifteenth century. Bologna, Paris, and Oxford were all founded in the twelfth century, as was Montpellier, which was for many years the greatest European medical school, with the possible exception of Salerno. Further on Mr. Kershaw says that during the same period so little had medicine developed that at the Universities of St. Andrews and Glasgow it was held to be a section of the faculty of theology, from which it was not separated "until at the University of Aberdeen the first professor of medicine and the only teacher of medicine then in Britain was appointed. . . ." Mr Kershaw does not give the date of this appointment The University of Aberdeen was founded in 1494, and if this date or one within some 15 years later is meant, Linacre was probably lecturing on medicine at Oxford. He returned to Oxford from Italy after 1491, and Wood says that he was lecturing, though he does not specify in what subject, in 1510 We think that "the only teacher of medicine in Britain" is too bold a statement With regard to the mention of medicine as a department of the faculty of theology, this implied no disrespect. Medicine and the priesthood had been closely connected all through the middle ages for the simple reason that a religious house was about the only place where a man had the leisure to study, and, moreover, the clerks were about the only members of the community who could read. Many eminent clerics studied medicine, such as Grossetete and Roger Bacon, and conversely, many eminent medical men [illegible]

"Inhabitants c[illegible] House Tavern. [illegible] hospitals are proportionally more expensive than general hospitals, Mr. Kershaw, though quite alive to the fact that it is not fair to judge of the efficiency of a hospital by its economy, shows that, taking 15 general hospitals and 31 special hospitals, the cost per in-patient per week in the former is £1 17s. 4d and £1 13s. in the latter, while an out-patient in a general hospital costs 7¼d. per attendance and in a special hospital 8½d.

In his last chapter Mr. Kershaw deals with the matter of abuse of charity. In his opinion, the special hospital is free from this abuse, and he gives some figures from the records of the Central London Throat and Ear Hospital which certainly show that the institution is valued by medical men. During the year 1908 there were 10,481 new out-patients and 706 in-patients Of the former, 3067 and of the latter 392 were sent in by medical practitioners. The book ends with a tabulated list of special hospitals founded during the nineteenth century in the United Kingdom, with figures for 1907 showing the proportion of patients sent by medical men. These figures show that medical men send patients in large numbers to the special hospitals, in which case the institutions "may reasonably claim exemption from any charge of abuse or injustice," says Mr. Kershaw with considerable force.

In the chapter wherein the author deals with specialism and medical education, there are given figures showing how the special hospitals are sought after by medical men and post-graduate students, and the chapter ends with a quotation from Sir James Paget's speech at the International Medical Congress of 1881 wherein he argued forcibly in favour of true specialism. The increase of knowledge, he said, was greater than that of mental power, and "for complete knowledge .. no one can hope for success unless by limiting himself within the few divisions of the science for which by nature or by education he is best fitted" Given a good general foundation, specialism is now almost a necessity for a comprehensive knowledge of any branch of medicine, and Mr. Kershaw's book marshals the arguments for it in a quiet and dignified fashion.

The Last Days of Charles II. By RAYMOND CRAWFURD, M.A., M D. Oxon., F.R C P. Lond. Oxford: At the Clarendon Press. 1909. Pp 80. Price 5s net.

THE study of the medical aspects of the deaths of prominent persons is one which is always of interest, especially when, as in the present case, the matter is surrounded by doubts which are by no means easy to clear up Of old time the only historical studies of deaths that had any medical aspect about them were flavoured with the odium theologicum to an extent which made them, however interesting, extremely untrustworthy, to say nothing of the remarkably vague notions of medicine which prevailed even until the eighteenth century. We need only refer to Lactantius with his "De Morte Persecutorum" and in later times to a delightful little eighteenth century work called "God's Fearful Judgements upon Tyrants and Sinners" as examples. But the book now before us is written by a scholar and an able physician, and deals with a matter upon which there is only too much evidence rather than too little. As Macaulay says, "Whoever attempts to digest this vast mass of materials into a consistent narrative will find the task a difficult one."

Dr. Crawfurd's view is as follows: "One may assert, with considerable confidence, that his (Charles') death was due to chronic granular kidney (a form of Bright's disease) with uræmic convulsions." It is easier to say from what disease Charles did not die than to state the contrary. It was certainly not apoplexy, if that term be confined to cerebral hæmorrhage, and there was no definite evidence of poisoning—a mode of death which was, of course, suggested at the time. In regard to this latter point, we note that Dr. Crawfurd says that the treatment as laid down in Scarburgh's MS. shows "that those who directed the treatment had no suspicion of poison in their minds." Towards the end of the illness, however, both Goa stone and bezoar were prescribed, which look as if some one had thought of poison. Dr. Crawfurd's theory of uræmia certainly covers most of the symptoms described, and the account of the condition of the brain as found at the post-mortem examination would fit in with uræmia. On the other hand, the King's mental condition throughout to within the last two hours of his life is very unusual in uræmia, for he maintained all his faculties to the end, and except when seized with the convulsions, which seem to have been epileptiform, he was perfectly rational and capable of discussing the most serious matters.

However, it would be difficult in the case of any patient, be he a king or a beggar, to separate the symptoms due to disease from those due to treatment such as the unhappy King received. He was taken ill on the morning of Feb. 2nd, after that Sunday night so forcibly described by Evelyn, and while in the convulsion was bled by Edmund King to 16 ounces with immediate good effect. By this time some six of the king's physicians had arrived. His Majesty was then cupped, given an emetic, a drachm of colocynth and scammony pill, and an enema. After one or two hours the enema was repeated and also the pill. In addition, to use Scarburgh's words, "ut nullum lapidem immotum relinquerent, applicata etiam fuerunt Epispastica universa Capiti derasis prius Capillis." As the day went on he was given more purgatives, including hiera picra and cream of tartar, another enema, spirits of sal ammoniac, and "cephalic plasters" to the soles of his feet. On Tuesday he was bled again, and his bowels were kept continuously relaxed with hiera picra and manna. On Wednesday and Thursday he was given a little rest, and on the Friday he was only given stimulants, Goa stone and bezoar. He died about noon. There was not much belief in the *vis medicatrix naturæ* in the seventeenth century and drugs were practically everything. Hiera picra (the very name shows in what esteem it was held) was and had been for many years the purgative *par excellence*—in fact, its name was applied metaphorically, as, for instance, the title of a twelfth century satire on the clergy, written by one who was at once a clerk and a physician, was "Ierapigra Magistri Egidii de Corboilo ad Purgandos Prelatos." The name, and practically the thing, has survived in the popular term "hickery pickery," and its chief constituent is aloes.

Scarburgh says practically nothing of the symptoms. Dr. Crawfurd gives the Latin text of his original MS. with a translation. Welwood, who was a physician, says that Charles had previously suffered from "fits." Some of these, as Dr. Crawfurd shows, were undoubtedly ague fits, but Welwood gives an account of one fit which was evidently epileptic. During the time of the Popish Plot Charles had an interview with a Romish priest, who came out of the royal closet looking very much alarmed, and, on being interrogated, said that while he was with the King "His Majesty was suddenly surprised with a Fit, accompanied by violent convulsions of his body and Contortions of his Face, which lasted for some Moments ...... and the King ...... bid him not to be afraid, for he had been troubled with the like before." Welwood also says that during the whole of his illness he complained of a racking pain in his stomach, which apparently came on just before the first fit. Could this have been of the nature of angina? Afterwards it might well have been caused by the amount of purgatives. On the whole, then, though uræmia seems to offer the most likely solution of the mystery, we do not think that it can be said to be an absolute one. Dr. Crawfurd adds to the value of his monograph by a memoir of Scarburgh illustrated by a reproduction of a picture of that physician with Arris engaged in a demonstration. Scarburgh is represented sitting in his Doctor's robes and the picture is interesting as apparently he is wearing the fur-lined cappa, a garment which has unfortunately disappeared at Oxford, although Cambridge still retains it for her Vice-Chancellor on degree days.

We congratulate Dr. Crawfurd upon an able piece of work and need only add that the printing and paper of the book are, as is only to be expected in a work issuing from the Clarendon Press, excellent in every way.

American Practice of Surgery: a Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors: JOSEPH D. BRYANT, M.D., LL.D., and ALBERT H. BUCK, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Vol. IV. New York: William Wood and Company. 1908. Pp. 1010. Price 7, 8, or 9 dollars, according to binding.

WE can only repeat the favourable opinion which we have expressed of the previous volumes of this treatise. This instalment is one of the more important, for it includes the chapter on dislocations extending to 100 pages, the general article on operative surgery occupying 500 pages, and a chapter on orthopædic surgery which fills some 400 pages.

The section on dislocations has been written by Dr. Emmet Rexford of San Francisco and it contains a good account of these lesions. It has a large number of illustrations, and many of these come from Helferich's well-known work. Dr. C. B. G. de Nancrède of Ann Arbor, Michigan, is responsible for the chapter on the influences which should be taken into account before an operation is undertaken; and in it he discusses the environment, the personal qualifications of the operator and assistants, operations "à deux temps," medico-legal considerations, and the influence of the condition of the heart and blood-vessels, of the gastro-intestinal, the genito-urinary, and the nervous systems. The effect of disease of the lungs is also discussed. Dr. George B. Johnston of Richmond, Virginia, has written on the preparation for an operation, and on the care of the patient during and immediately after an operation. It contains many useful suggestions. The article on anæsthetics is the joint production of Dr. Freeman Allen and Dr. F. E. Garland of Boston, Massachusetts. A short sketch is given of the history, and then a very full account follows of the use of the several anæsthetics; it is written with great care and represents very closely the received opinions on anæsthesia. Dr. J. F. Mitchell of Washington has contributed the chapter on local anæsthesia; he maintains that the various methods of local anæsthesia have not been appreciated as they should. He describes all the ordinary methods, but the description of spinal anæsthesia is hardly sufficiently full.

Dr. W. L. Rodman and Dr. J. S. Rodman of Philadelphia are responsible for the excellent section on amputations and disarticulations. In the account of Syme's amputation no mention is made of the useful method of dissecting the heel flap from above, a far easier way than dissecting it from below, as Syme described it. It is also advised that in patients under 14 years the posterior epiphysis of the calcaneum should be left in the heel flap; this is certainly not advisable if the amputation is for disease. The illustrations are numerous and for the most part excellent, but in a modern operation the surgeon should not be represented wearing his coat and with his shirt cuffs visible. A useful appendix to this chapter is a brief account of artificial limbs. Dr. Horace J. Whitacre of Cincinnati has written on excisions of bones and joints, and his article is judicious, for he inclines on the whole towards the more conservative procedures. Dr. J. M. Keyes of New York City is responsible for the chapter on the ligature of arteries and veins in their continuity. The account of this branch of surgery is good. It is a pity to speak nowadays of the "descendens noni" nerve, when we recognise 12 pairs of cranial nerves. It should be called "descendens hypoglossi."

The section on minor surgery and bandaging has been contributed by Dr. R. S. Fowler of Brooklyn. The illustrations are specially good and are reproduced from photographs. This chapter includes such matters as exploratory puncture, aspiration, vaccination, and transfusion. Dr. J. S. Stone's article on plastic surgery contains all that can reasonably be expected, and most of the operations described are illustrated. Dr. C. F. Painter of Boston, Massachusetts, has written on congenital dislocations; he preserves a very judicious attitude regarding the treatment of congenital dislocation of the hip, a matter on which many diverse opinions have been expressed. The remaining chapters deal with various departments of orthopædic surgery—Dr. G. D. Stewart of New York writing on torticollis, Dr. C. F. Painter on infantile paralysis, Dr. Royal Whitman of New York on deformities of the lower extremities, and Dr. C. L. Starr of Toronto on caries of the spine. They are all good; we would suggest that it would have been well to point out that "infantile paralysis" by no means rarely occurs in adults.

The whole book, as we have already stated, fully maintains the high standard of the earlier volumes.

Handbuch der Technik und Methodik der Immunitatsforschung (*Hand-book of the Technique and Methods of Investigation of Immunity.*) Edited by Professor Dr. R. KRAUS and Dr. C. LEVADITI. Second Volume, First Part. With one curve and 56 plates. Jena: Gustav Fischer. 1908. Pp. 278. Price 8 marks.

THE study of immunity has enriched therapeutics with curative serums and other substances of the greatest practical value. The technique involved in the investigation of the protective processes summed up under the term of immunity and in the preparation in large quantities of these curative substances is a matter of great importance. The necessity for exact methods and for rigid precautions is, perhaps, greater in bacteriological procedures than in any other branch of biological science. An authoritative textbook by recognised masters of the subject should therefore be of great value, and in the book before us we have an exhaustive and practical description of the methods employed.

Professor R. Kretz of Prague contributes an account of the technique of the preparation of antibodies in large animals, with especial reference to the preparation of diphtheria serum from horses. Dr. Thorvald Madsen of Copenhagen describes the methods of immunisation in small animals. Dr. C. Levaditi, of the Pasteur Institute at Paris, describes the technique of the preparation of antibacterial and antitoxic immune serums as practised in the Institute, more especially in regard to the preparation of diphtheria and tetanus antitoxins, antistreptococcal and antidysenteric serums. The methods for injection of the antigen, for collecting the serum, for preparing and packing it, are described and illustrated. An interesting description is also given of an exsiccator for preparing dried serum. It is capable of dealing with eight litres of serum in eight hours. Dr. Ernst Pribram of Vienna contributes an interesting account of the preparation of antibodies by means of chemical and physical methods. He divides the antibodies into (1) those which hinder a specific effect of the antigen, such as toxic, hæmotoxic, and ferment actions; (2) those which lead to precipitation and agglutination; and (3) those which dissolve cellular structures—"lysins," such as bacteriolysins, cytolysins, and hæmolysins. The effects of various protein precipitants and of various substances obtained from epithelial structures are described. Dr. Thorvald Madsen gives a long account of the properties of diphtheria antitoxin, including the methods for estimation of its antitoxic power and for demonstrating its harmlessness as regards organisms. The nature of the antitoxin unit is explained and the method of its estimation given in detail. The questions of the duration of activity, of the mode of action, and of the prophylactic use of the serum are also discussed in detail. The same author gives a description of botulismus antitoxin. Tetanus antitoxin is discussed by Dr. M. von Eisler and Dr. E. Pribram of Vienna. They give details of its preparation, standardisation, and of its use. They describe the various methods of administration by subcutaneous, intravenous, intraneural, intracerebral, and subdural injection. Dr. R. Doerr of Vienna describes dysentery antitoxin and gives a historical summary of the researches leading up to its recognition as an antitoxic rather than an antibacterial serum. He gives favourable accounts of its action in the treatment of dysentery.

Dr. R. Grassberger and Dr. A. Schattenfroh of Vienna deal with the antitoxin of symptomatic anthrax; and Dr. R. Kraus, also of Vienna, with the antitoxins for the cholera and other vibrios. Dr. R. Stenitzer of Vienna contributes an account of typhoid antitoxins, including those of Chantemesse, Besredka, Macfadyen, and Aronson. Dr. Pribram and Dr. V. K. Russ discuss the various antihæmotoxins. An interesting description is given by Professor A. Calmette of Lille of antitoxins against snake poisons. The problems of natural immunity, of artificial active immunisation, of titration of the immune serums, and of polyvalence are all considered as well as the therapeutic applications of the serums. Professor M. Jacoby of Berlin deals with antibodies for vegetable toxins, including antiricin, antiabrin, and anticrotin; and Dr. O. C. W. Prausnitz of London with hay fever antitoxin. Each article has a useful bibliography attached to it.

This book is a valuable addition to bacteriological literature and should be almost a necessity in bacteriological laboratories.

LIBRARY TABLE.

The Elements of Hygiene for Schools. Compiled by ISOBEL MCISAAC, late Superintendent of the Illinois Training School for Nurses. New York. The Macmillan Company. 1909. Pp. 172. Price 3*s.* 6*d.*—The aim of this book is to present the subject of hygiene in such a way that it may be of practical everyday use to a large number of pupils who will have little opportunity for study of the subject, but it contains a great deal more than could be assimilated by scholars of elementary schools, and is more fitted to the intelligence of the teachers in such schools. In the opening chapter a short account of micro-organisms is given, and chapters follow on general hygiene with reference to air, soil, and water. The dissemination of disease is dealt with, as are also personal, household, and school hygiene, the hygiene of occupation, and the employment of women and children. There are nowadays many little books published containing information of this sort, and Miss McIsaac has produced a good specimen of the class.

A Handbook on Foreign Study. Edinburgh: The Darien Press. Pp. 150. Price 6*d.* net.—This little book contains valuable information concerning the universities of Europe in a form very suitable for reference. Its aim, as stated in the preface, is firstly, to popularise in British academic circles the idea of studying abroad; and secondly, to afford those who desire to study abroad some general guidance as to the best place to go with the maximum of pleasure and profit. The handbook is made the more valuable by reason of the fact that it has been compiled mainly from official publications or reports "based on personal experience." We have for several years published in various Students' Numbers of THE LANCET information regarding post-graduate study abroad, so far as medical education is concerned, but this little book, which has been compiled and edited by Mr. H. J. Darnton-Fraser under the auspices of the Students' Representative Councils of Great Britain and Ireland represented at the British Universities Students' Congress, deals with all the faculties in the universities of Europe. Mr. Haldane, the Secretary of State for War, contributes an introduction, and there are short articles by Professor William Osler on Medicine, Dr. J. Hogarth Pringle on Surgery, Professor Pringle Patterson on Philosophy, Dr. J. A. S. Watson on Agriculture, the Rev. T. W. Watt on Divinity, Dr. T. C. Thomson on Science and Engineering, and some general remarks on the Study of Law. The information in regard to each university town is given under such headings as fees, cost of living, climate, attractions, libraries, museums, vacation courses, and so forth, and a most useful feature is information as to the cost of a journey to any particular town.

The Fourth Olympiad. Drawn up by THEODORE ANDREA COOK. British Olympic Association. Pp. 794.—This is the official report of the Olympic Games celebrated in London in 1908. It deals with the performances of some 20 different nationalities in 20 divisions of sport and records the outcome of more than 100 separate athletic contests, together with the code of rules under which competitions took place in each of these events. It forms, therefore, a sort of blue-book on the conditions and circumstances of athletics at the present day, and as such will have an interest for many of our readers. Among the illustrations are a picture of Queen Alexandra presenting Dorando with a gold cup, reproductions of the medals and prizes won by the several competitors, portraits of the competitors themselves, and pictures of various incidents during the course of the Olympiad.

Woman in Industry, from Seven Points of View. By GERTRUDE M. TUCKWELL, CONSTANCE SMITH, MARY R MACARTHUR, MAY TENNANT, NETTIE ADLER, ADELAIDE M. ANDERSON, and CLEMENTINA BLACK. London: Duckworth and Co. 1908. Pp. 217. Price 2*s.* 6*d.* net.—This series of chapters presents a useful and lucid account of the position of the woman worker, the several writers considering in turn the regulation of work for women, the minimum wage they should accept, and their lot in trade unionism, while other topics such as infant mortality, the employment of children, and factory legislation come in for close attention. The book, which is intended to be read by the general public, has a preface by Mr. D. J. Shackleton, M.P., in which the importance of organisation and the necessity for educating public opinion are equally insisted upon.

The Children of the Poor. By A. D. EDWARDS, M.B., B.S. Lond. London: Hammond, Hammond and Co. 1909. Pp. 74. Price 1*s.* net.——*Wastage of Child Life as exemplified by Conditions in Lancashire.* By J. JOHNSTON, M.D. Edin. London: A. C. Fifield. 1909. Pp. 95. Price 1*s.* net.—The author of "The Children of the Poor," who is medical officer to the Bournemouth Education Committee, has had many opportunities of studying the lives of the children of the poor in the only places where such study can be adequately made—namely, in their own homes. He writes with a sympathetic pen and his sketches of child life in the slums, in the workhouse, and in the hospital bear the stamp of truth. He is unsparing in his condemnation of such things as "soothing" medicines and "teething powders." "For every one child," he says, "who dies as the result of an accidental overdose of these drugs a thousand infants are damaged seriously in constitution," and his reproaches of the law which allows the Government to benefit largely by the sale of such concoctions form the echo of medical opinion that has been expressed over and over again. In almost every continental country children, at any rate, are protected to some extent from these things by legislation, while Australia and the United States are considering strong measures to suppress their sale Realising that the child is the nation's most valuable asset, he concludes his little book with the words: "As evolution tells us that since these children are born and live long years it were better for the State that they should be given during infancy and childhood the chance of health, so economy indicates that the cost of exchanging so many weakly adults for healthy, useful citizens would be a good investment for the State."——Dr. Johnston's book forms No. 7 of the Fabian Socialistic Series, and deals in a systematic manner with the same subject. It also is written out of full knowledge of the subject and forms a useful addition to what must now be becoming a very voluminous literature. But this is as it should be, for the subject is one for the very serious attention of the public mind.

JOURNALS AND MAGAZINES.

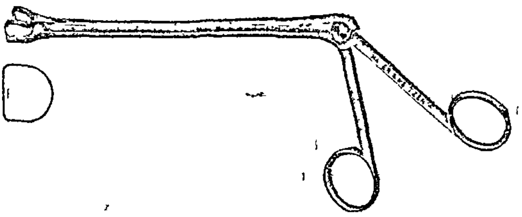
The Seventh Bulletin of the Sleeping Sickness Bureau—The monthly bulletins of the Sleeping Sickness Bureau are always valuable as they contain accurate summaries of all the recent papers and publications relating to sleeping sickness and other forms of trypanosomiasis. Bulletin No. 7 is no exception, for it well maintains the high standard attained by its predecessors. Under the heading of Trypanosome Transmission Experiments, a summary is given of Professor Kleine's observations which were published in May last in the *Deutsche Medizinische Wochenschrift.* These experiments were undertaken primarily to ascertain whether infective tsetse flies convey T. gambiense to a healthy animal only once—i.e , mechanically, or if they are able to infect many animals one after the other in the course of several days or weeks. The latter result, if proved, would show that a sexual development of the trypanosome occurred in the fly. Kleine believes that his experiments prove that the transmission of T. gambiense by the glossina palpalis is not mechanical, but that the fly is the true host of the trypanosome. He also concludes that the development of the parasite in the fly may take a shorter time than the 20 days which he had formerly assumed to be the required period. Another interesting abstract is that of a paper by Carlo Chagas of Rio de Janeiro, who describes two new trypanosomes, one of which he found in a marmoset, and the other in a species of bug (conorrhinus) which is present in great numbers in the poorer-class houses in the State of Minas (Brazil), and which frequently bites human beings, particularly children, on the face. Chagas succeeded in finding in the blood of a patient a trypanosome identical with that found in the bug, the inference being that this particular bug is the transmitter of the trypanosome Another summary relates to a number of papers dealing with the factors influencing the incubation period in trypanosomiasis, another discusses the symptoms of human trypanosomiasis We may also mention summaries dealing with lesions of the optic nerve in trypanosomiasis, including atoxyl blindness, the action of human serum on trypanosome infections, the vitality of trypanosomes in cadavers, the bionomics of tsetse flies, the treatment of human and animal trypanosomiasis, and trypanosomes in various animals Appended to the bulletin is a detailed programme of the work which is now being carried out in the Sleeping Sickness Commission's laboratory in Uganda, and which demonstrates the comprehensive character of the investigations Another long and useful list of works of reference on trypanosomiasis, continued from the last number, is given at the conclusion of the bulletin

Man —The July number of *Man* contains a long paper entitled "Notes on the Hair and Eye Colour of 591 Children of School Age in Surrey" It is by Miss Barbara Freire Marreco, and was submitted in compliance with a regulation for the diploma in anthropology in the University of Oxford in June, 1908 The area in which the children lived extended from Chobham to Godalming and Shamley, Guildford being the only town included within its limits The observations were recorded, in the manner recommended by Dr John Beddoe, on a card ruled into three divisions for eye-colour and subdivided into columns for five colours of hair The outstanding feature of the record was the predominance of "medium" eyes—i e, those of a dark bluish grey, hazel, or light brown colour—amounting to 65 per cent for all the children The colour of the hair called by Dr Beddoe "niger" or absolute blackness was not observed among these children Miss Freire Marreco explains the methods employed by Dr Beddoe and by Collignon respectively for computing the numerical inferences to be drawn from such observations, but she thinks that neither of them is satisfactory when there is a large predominance of "medium" eyes with 36 per cent of brown hair

New Inventions.

A NEW ADENOID FORCEPS

THE forceps illustrated in the figure have been designed for the snipping away of small tags which are sometimes left after the sweep of a caged curette in the operation for removal of adenoids The flat ended blades allow one to snip off the remnant flush with the pharynx The D shows the actual size of the fenestration of the lower blade Messrs Mayer and Meltzer of Great Portland street, London, W,



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Looking Back.

FROM

THE LANCET, *SATURDAY*, August 13th, 1831.

BELLUM MEDICUM AT WARSAW.

To the Editor of THE LANCET

SIR,—It is to be regretted very much that such serious disputes should have arisen at Warsaw amongst the medical staff there, on the subject of cholera It is, I will admit, difficult to discuss scholastic questions without awakening the passions, but when such a devastating demon as this disease is making such fearful strides, it is lamentable to see men quarrelling about bismuth and calomel If they continue their bickerings, I would recommend the aid of a third metallic remedy—lead—to be administered not to the poor patients, but to the doughty doctors, or I would make bottle imps of them, and leave them like their prototype in the *Diable Boiteux*, until some friendly Asmodeus came to release them Two of these gentlemen, I find, are thinking of fighting for the reputation of their panaceæ, and if they kill each other in their chivalrous tournament, they will not probably be missed at the Polish capital Many men have usefully turned their swords into ploughshares, and if these two doctors change their lancets into rapiers, perhaps the Poles will not lose by the transformation

Mais assez de badinage As to remedies for this epidemic, practitioners must depend upon chance more than upon the efficacy of any medicinal agent Any one who has seen many cases of cholera, must know that all our theory and treatment regarding it are sheer speculations, and if he have the candour to confess it he will say that we are absolutely ignorant of its causes and its cure How absurd, then, and empirical does it appear to see two men going to fight for what they conceive the indisputable merits of calomel and bismuth, for the removal of this disease! During a campaign of three years as assistant surgeon in the Indian army, in the worst climates, I never saw a case of cholera cured by any reputed specific It was admitted that the most sensible and rational practice was to meet the symptoms as they presented themselves, and not to adhere to the use of any particular medicine, whatever name or character it might have acquired I could enumerate many ways (but I would not fight for any one of them) of what I might call curing cholera, but I dare not trespass so much upon the pages of your journal I will conclude therefore by saying that I will never believe any man, although armed with bismuth and a broadsword, that he can cure cholera, until he can establish a remedy for it as certain as sulphur for psora, mercury for syphilis, or cinchona for intermittent.

I am, Sirs, yours, &c,

August 8, 1831 VIATOR.

[illegible]

by the Curator of the Royal College of Surgeons in Ireland, the President of the College, and the Professor of Anatomy in the University of Dublin, is open to any student whose name is on the anatomical class list of any school in the United Kingdom In 1910 the prize is offered for a dissection of the cervical sympathetic and preparations entered must be in the hands of the Curator on or before April 30th Particulars of the conditions under which the competition must be carried out and printed forms necessary for application can be obtained from the Curator of the Royal College of Surgeons in Ireland

THE
BRITISH MEDICAL ASSOCIATION.
SEVENTY-SEVENTH ANNUAL MEETING
AT BELFAST.

THE SECTIONS.
OPHTHALMOLOGY.
THURSDAY, JULY 29TH.

President, Dr. J. W. BROWNE (Belfast).

Professor EMILE FUCHS (Vienna) read a paper on

Malformation of the Cornea in Cases of Inherited Syphilis.

He said that the work of Hutchinson gave the first account of the later symptoms of inherited syphilis, and since the time of his writing scarcely anything had been added to our knowledge, so complete had been the initial description. His present paper was a trifling contribution to Hutchinson's work. It had struck him that in some cases of the disease the cornea was shaped as a vertical ellipse. The normal cornea tended to have the appearance of a horizontal ellipse because the tissues of the limbus encroached on the cornea above and below, but this appearance was more apparent than real. In these cases of disease, however, the vertical ellipse was real, and not due to encroachment of the limbus. So far he had not arrived at the cause of the malformation, nor had he enough material, as yet, to say with what frequency it was observed. In 28 cases noted 20 occurred in females, and it was noteworthy that interstitial keratitis was much more frequent in females. Half of the cases had interstitial keratitis, 5 chronic iritis, 1 congenital cataract, 2 corneal opacities, probably the result of strumous keratitis. The remaining 6 were old people with senile cataract. Excluding the last 6 old people, for in age the diagnosis of inherited disease was not readily made, he found that in the other 22 cases 8 showed definite inherited syphilis, 8 some indications of it, and 6 no symptoms. During the year he had seen about 50 cases of fresh interstitial keratitis and only 8 of these had the ellipse, so that it was by no means common. He thought that the malformation might prove to be another of the signs of the inheritance of syphilis, although it must, like other signs, be taken with due regard to other conditions.

Mr. E. TREACHER COLLINS (London) asked if Professor Fuchs had examined any of these oval corneæ anatomically so as to eliminate the possibility of the ellipse being due to encroachment of the limbus. The natural human shape was the horizontal oval, and this was marked in fœtal eyes and in some cases of microphthalmia.

Professor FUCHS replied that he had as yet had no opportunity for anatomical examination. But the vertical ellipse was a striking feature, and with it went marked irregular astigmatism often to as much as 5 to 10 dioptres.

Dr. W. B. INGLIS POLLOCK (Glasgow) read a paper on

The Visual Acuity of School Children.

He said that the statistics of visual acuity found in annual reports of different educational authorities varied greatly. In Scotland they were for some parts as low as 6·5 per cent. defective, in others as high as 77·8 per cent. defective—an amazing difference. The London County Council return for 1,196,504 children during the last two years and nine months was 10·39 per cent. defective. The speaker had come to a percentage of 11·65. In some measure the difference was due to modes of testing vision. In London the best binocular vision was taken as the standard; in other places the vision of the worse eye, in yet others that of the better eye was taken as the basis for statistics. Each claimed merits for its procedure. But he said that the vision of the worse eye was not the vision of the child, neither was that of the better eye so good as a rule as of both eyes acting together. The present haphazard mode of compiling statistics was likely to bring the whole question of medical inspection of school children into contempt and discredit.

Mr. N. BISHOP HARMAN (London) said that he had had a large experience of school eye work in London; that led him to the conclusion that the recent edict of the Board of Education that the vision of each eye of a child must be taken separately caused a futile waste of time. We wanted

odd eyes; that, he thought, was an objection weigh seriously in practice. He had made larg tests and found the alleged error of this mode small as to be negligible. He regretted tha had nothing to tell them of the eye conditio for these defects in vision. Recently he had results of the examination of the eyes of children, with results that were to be found i ings of the Royal Society of Medicine (Section of Disease in Children), May, 1909. The myopia in school children was no more than and probably less, for their tests caught the n those hypermetropes who had good accommoda

Dr. R. WALLACE HENRY (Leicester) thou elimination of cases of odd eyes was necessa the headache caused by such a condition. H Mr. Harman's returns of the incidence of myo he had examined all the defective in 10,000 ch the total only 2·5 per cent. had myopia. In rate of increase of myopia it was necessar the age factor, and not the relation to cla for myopes were handicapped and tended to standards.

Professor R. A. REEVE (Toronto) questio quency of asthenopia in children; it mostly ca age of from 20 to 30 years, and he found th not suffer in school years.

Dr. A. FREELAND FERGUS (Glasgow) read a

Trephining in Glaucoma.

He said that his operation was essentially a Lagrange's operation. He had no hesitation his modification stood or fell with that of Lagr tomy was difficult of performance, but treph tremely easy. He turned forwards a large con then with a Bowman's corneal trephine bored of the sclera as close to the limbus as possi slipped a repositor between the sclera and th until the point of it appeared in the anterior c conjunctiva was replaced and the operation It had the advantage of being so little painful anæsthetic was quite unnecessary, a point of gre since the subjects of chronic glaucoma were suffering from vascular disease and took gener badly. Again, there was no risk of injury to t lastly, the risks of sepsis could be reduced to a the large conjunctival flap speedily adhered an wound. Trephining the sclera had been perfor by Argyll Robertson, but he cut the sclera far did it for the temporary relief of tension. further said that he advocated the method for only, since the regular iridectomy was by f treatment for acute cases. He gave details o securing asepsis of the conjunctiva.

Dr. A. HILL GRIFFITHS (Manchester) comm Fergus's methods of examining the flora of th previous to operating. He agreed that it w thought that in any case it was not possibl membrane from organisms.

Dr. A. LITTLE (Bradford) remembered Arg doing his early operations. His own objection tion lay in the risk of subsequent infection of th the thin conjunctiva overlying the gap in th was sure a cystoid scar increased the risks of th in some cases he had seen hypopyon iritis y operation.

Mr. G. A. BERRY (Edinburgh) said that any in be considered from the point of view of glauco Dr. Fergus aimed at a filtration cicatrix. of opinion that iridectomy was the best a cedure, and he should not do any other operat had been tried and failed. In his hands irid very rarely. He believed that success in irid removing a piece of healthy iris. If a cystoid he should say that the glaucoma process h checked.

Mr. TREACHER COLLINS said that Dr. Fer operations: (1) sclerotomy; and (2) cyclodialysis made of the repositor must detach the ligar tinatum and so put the anterior chamber steps in the operation Dr. Fergus attributed his success. In his own experience cystoid scars were not a permanent success, but he had had some good results with cyclodialysis.

Mr. S. **JOHNSON TAYLOR** (Norwich) asked if the method had been tried on blind, painful, glaucomatous eyes; if it could save enucleation then it had a distinct value.

Mr. **THOMSON HENDERSON** (Nottingham) agreed that permanent bulging wounds indicated that the glaucomatous process had not been checked by the operative procedure.

Professor **FUCHS** said that he had trephined, but had given it up. Further, he had had experience of cyclodialysis and his assista [illegible] hopefu [illegible] to say t [illegible] that the amelioration was not permanent; the tension recurred, and anatomical examination of some of these eyes showed that the scarring of the tissues at the seat of the operation was very dense, so that the passage of the aqueous was less in these parts than elsewhere around the filtration angle. He put iridectomy first as the operation for choice.

Dr. **FERGUS**, in reply, said that the elimination of organisms from the conjunctiva could not be obtained by the use of drugs. What he did was to irrigate the conjunctiva with plenty of sterile normal saline solution several times a day for four days prior to operation when time permitted. That the result was worth the trouble was proved by the fact that in 700 cataract extractions he had not lost one by suppuration. He agreed that iridectomy was the operation for choice, but there were cases of the chronic order in which some form of sclerotomy seemed of value.

Mr. **TREACHER COLLINS** (London) opened a discussion on

Disease of the Lymphoid Tissue of the Conjunctiva.

He said that trachoma was the particular disease to be discussed. He had exceptional opportunity of studying it in the schools of the Metropolitan Asylums Board. Children found to exhibit eye trouble in London Poor-law schools were drafted into these isolation schools until free from disease. In the past five years he had received 2441 patients, and of these 700 were suffering from trachoma. Many of them exhibited the disease in its earliest form. The first point he wished to emphasise was that trachoma was a contagious disease. When first one of these schools was started a "house mother" and a nurse, both previously healthy, contracted the disease in an acute form from an affected child. Again, the schools were so delightful in their surroundings that children were loath to leave, and he had found that some admitted for simple disorders deliberately inoculated themselves with discharges from their fellow pupils' eyes; in these cases of inoculation, as definite as any possible, trachoma resulted. The contagious character of trachoma being established, there could be little doubt that the contagious element was a micro-organism. He then referred to the work of Prowazek and Greeff, who, working independently, had discovered in cells from trachomatous tissues by the use of Giemsa's stain minute ovoid bodies smaller than the smallest known cocci. The evidence in favour of their being a specific organism lay at present in the frequency of their appearance in trachoma and their absence in other diseases. In any case they could be sure that the contagion was not air-borne, but that it was conveyed in discharges. For if ordinary precautions of cleanliness were taken neither nurses nor medical men in constant attendance on these cases became affected. Next, there was no doubt that the disease was unlike purulent and muco-purulent inflammations of the conjunctiva, for in these the process was limited to the epithelial lining. Trachoma was more like tubercle, in that both alike produced definite endothelial nodules which were the essence of the diseases. It would therefore seem likely that the contagion of trachoma would be found to exist most commonly in the lymphoid tissues. That the trachoma bodies of Prowazek and Greeff were found only in epithelial cells seemed to him to tell against their being the specific organism. The earliest symptom of the disease appeared to be the presence of grey, scattered, avascular spots, rather smaller than a pin's head, in the tarsal conjunctiva of the upper lid. Graefe and Jacobson had termed these "elementary or primary granulations." Their presence might be obscured when there was coexisting catarrh. The trachoma organism would appear to be non-pyogenic; its toxin seemed to cause immense new formation of lymphoid tissue, increase of plasma cells, and in the later stages formation of fibroblasts. Mayou had pointed out that the characteristic discharge of trachoma was an enormous number of plasma cells. Trachoma was essentially a chronic disease; acute symptoms were usually the result of intercurrent infections—the Koch-Weeks bacillus in England, or that and the gonococcus in Egypt. In the process of cure the follicles might disperse naturally by rupture. They might be absorbed, particularly when there was invasion of polynuclear leucocytes, such as was fostered by intercurrent catarrhal affections and by most of the modes of medical treatment. Gross fibrosis such as was obvious to the naked eye was not a necessary end to the disease; with the best results the scarring might be so minute as to be invisible to the eye. As regards treatment, expression of overloaded follicles by squeezing them out, and excision of the retrotarsal folds in the exceptionally bad cases, were both useful procedures. Mr. Collins never found complete excision of the folds and tarsus necessary. The time-honoured copper sulphate still held first place as the best application to stimulate absorption of the follicles He referred to Leber's experiments with different metals inserted into the anterior chamber as explanatory of the action of copper salts. Kataphoresis of copper had been tried, but it was too painful. Jequiritol was of much help in obstinate cases. X rays were painless but variable in their results, probably because of the difficulty in securing exact dosage. Radium he had used with little result, for the quantity at his disposal was not very active. Grattage, the stimulation of the tissues by violently rubbing them with hard brushes, spiked iron instruments, or the knife blade, acted only by stimulating the growth of scar tissue. He concluded by stating that in his experience trachoma was completely curable, though the process was long.

Professor **RICHARD GREEFF** (Berlin) followed, and gave a description of his investigations into the bacteriology of the disease. For the last 10 to 15 years numerous workers had laboured indefatigably at the subject, and it was only when new methods of staining were discovered that his hopes of a real advance had been raised. In Giemsa's stain they had a reagent that had a remarkably selective action on all protozoal material. In collaboration with his assistant Dr. Clausen, and later with Professor Frosch, he had made extensive investigations on both trachomatous and non-trachomatous disease. The bodies which he had found were extremely minute. They were found for the most part massed together in pairs or clusters near the cell nucleus, in the form of a cap, only separated from the nucleus by a narrow clear margin. The space containing the granules enlarged rapidly, causing the cell to swell and burst. They were found most frequently in the epithelial cells, but they had been seen in the deeper adenoid tissues. They disappeared on treatment. So far they had not been cultivated. The bodies had now been recognised by many workers in different parts of Europe and even in Japan. They differed essentially from the granules of eosinophile cell débris. He thought they were more akin to protozoa than bacteria.

Mr. A. F. **MACCALLAN** (Cairo) described the work being organised under his direction in Egypt in the formation of ophthalmic hospitals for the treatment of trachoma. One fully equipped hospital had been built at the cost of £7000 at Tanta, another would be completed shortly at Assiout, and a third was in course of erection at Mansoura at the expense of an Egyptian gentleman. The travelling hospitals were doing excellent work. Of the extent of the spread of trachoma amongst the population no better evidence could be given than the condition of one primary school in which 96·43 per cent. of the pupils showed active or passive trachoma. He next dealt with the phases that the disease presented during its existence and progress towards cure.

Professor **FUCHS** said that he had tried to find these new trachoma bodies and had succeeded; indeed, he had been able by this mode of staining to differentiate doubtful cases [illegible] this was a [illegible] epithelium [illegible] tissues or [illegible]

Mr. **SYDNEY STEPHENSON** (London) said that in early days there was much confusion, owing to the teaching that the presence of follicles in the conjunctiva was an early stage of trachoma. That this was not true could be shown by the examination of the children of the general population. After seeing some 15,000 children of varied classes he concluded that only 5 per cent. had conjunctivæ free from changes of some sort or other. Folliculosis was closely associated with such conditions as adenoids and enlarged tonsils. Follicles in the conjunctiva were not the first stage of trachoma, but had an entirely different significance. The cases of inoculation described by Mr. Collins, and many he had seen himself, left no doubt in his mind that trachoma was not an air-borne, but an essentially contagious disease. Further, he was convinced *that proper segregation and treatment would secure* extermination of the disease.

Mr. JAMES A. CRAIG (Belfast) said that Ireland enjoyed the unenviable position of being classed next to Egypt as a country in which trachoma was rife. Unfortunately this was true of the industrial schools and workhouses: they were hotbeds of infection. And all this was due to lack of the most ordinary precautions of cleanliness and hygiene. Legislation was badly wanted. The disease was worse than small-pox, for the sufferer was contagious indefinitely. He cited an instance where five nurses were infected with acute trachoma. As regards treatment, he could say that cure had been obtained in from six to nine months in selected cases—that is, in patients who were healthy generally and whose surroundings were good. He no longer held with "bold" surgical methods and brass had banished wire brushes; they did more harm than good. Copper sulphate was ahead of anything else.

FIG. 1.

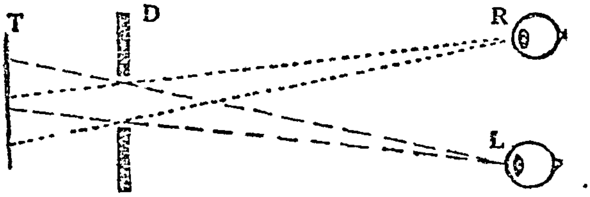
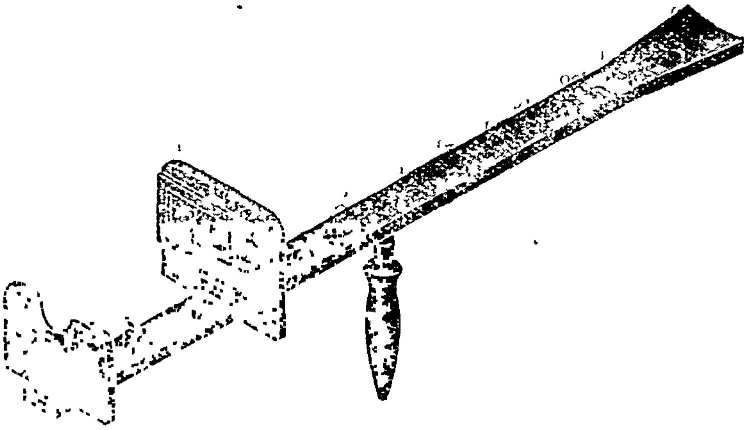


FIG. 2.



Dr. JOSEPH NELSON (Belfast) contrasted the results of treatment of two school outbreaks. In one, ordinary drug treatment was used and the disease spread. In the other, a separate colony was formed, good food and good hygiene were obtained, and these measures with drug treatment stayed the plague. He said it was desirable that the common people should know of the disease and get a "holy horror" of it, then it would be checked.

Dr BYERS (Toronto) and Professor REEVE (Toronto) spoke of the work that was done by emigration authorities for the prevention of the entry of diseased subjects into new countries.

The executive of the section was asked to draw up a resolution on the necessity for Government "*action*" in the suppression of the disease.

FRIDAY, JULY 30TH.

The executive of the section, following the recommendation arrived at in the discussion on Trachoma on the preceding day, presented a resolution for the acceptance of the section to the effect that the Government should be urged to institute measures for the checking of the spread of the disease. After considerable discussion, a resolution, drawn up and proposed by Mr. TREACHER COLLINS (London), and seconded by Dr. A. GREENE (Norwich), was put to and accepted by the meeting:—

> That the Council of the British Medical Association be asked to draw the attention of the Local Government Boards of the United Kingdom to the pr lower classes, to the damage to sight contagious character of the discharg and to the importance of preventing any transference of such discharge from one person's eyes to another's by means of the washing appliances in the institutions under their control.

Mr. J. H TOMLINSON (Egham) demonstrated the usage of a new instrument of his invention,

A Skotograph with Binocular Fixation.

The instrument could be used as a perimeter, particularly for the mapping out of blind or anæsthetic areas. The test object used to prove the sensitiveness of the retina is a second image of the spot of light used as the fixation point. The second image is obtained by reflection from a mirror *hinged within a cone, the angle of the mirror determining* the angular position of the second image on the retina The cone could be rotated round its axis so that the second image is caused *to make a circular excursion on the retina*. In this way Bjerrum's method of investigation can be employed. The instrument automatically registers the subjective findings of the patient on suitable charts.

Dr. ALEXANDER FLEMING (London) gave a demonstration of his modification of the

Wassermann Serum Diagnosis for Syphilis,

an account of which was published in THE LANCET of May 29th, 1909, p. 1512.

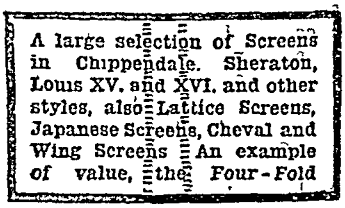
Mr. LESLIE PATON (London) said that Dr. Fleming had examined by these means many of his eye patients at St. Mary's Hospital, and the results were surprisingly good and useful.

Mr. N. BISHOP HARMAN (London), in the course of a demonstration of the

"Diaphragm Test" for Binocular Vision and its Disorders,

said: This test is one of extreme simplicity, and yet one that will elicit a surprising amount of information when applied in practice. It is simple because it rests upon a phenomenon that is of every-day occurrence. On looking out of a window the man who has natural binocular vision sees more widely than does the man who has but one eye or who sees with but one eye at a time. With this test the patient looks through a hole in a screen (D, Fig. 1) at the test-card (T) The paths of the vision are shown in Fig. 1, and the manner in which right and left monocular and also binocular vision is arranged for. The form of the instrument is shown in Fig. 2. The appearance of a test-card for reading is seen in Fig. 3; the dotted lines on the print enclose the band of print seen by both eyes; the lateral portions are seen by each eye singly by crossed vision. The test-cards are of great diversity. Print of any size from diamond in set paragraphs to canon in paired capitals; black or coloured squares variously disposed; pictures for children. The test is of value for the following purposes: (1) To determine the equality of visual acuity in the two eyes; (2) to determine the presence, the absence, or a defect of binocular vision; (3) to exercise the vision in squinting eyes; (4) to detect malingerers feigning monocular blindness; and (5) to demonstrate certain physiological phenomena. Take, for example, latent squint: the phenomena produced

FIG. 3.



A large selection of Screens
in Chippendale. Sheraton,
Louis XV. and XVI. and other
styles, also Lattice Screens,
Japanese Screens, Cheval and
Wing Screens An example
of value, the Four-Fold

123456789

The man with good binocular vision reads 1234 with the right eye, 6789 with the left, and 5 with both eyes. In convergence (esophoria) the middle letters are overlapped and are suppressed so that the man reads something like this:

126789

In divergence (exophoria) the middle letter is reduplicated, and the man reads:

12345 56789

In vertical displacement (hyperphoria) the parts of the line of letters seen by each eye are on different lines or levels, thus:

12345
56789

All these phenomena can be seen by the surgeon himself when an excessive prism is placed before one eye, or by simply displacing one eye by the push of the finger. Again, a malingerer can hardly escape detection by the use of this test. Answers by the mouth are not necessary, for the surgeon, watching the man's eyes, will see *the coordinate movements of the eyes as the man looks from one to other area of crossed vision.* The movement is proof of two-eyed vision; the man with only one seeing eye does not make it. Mr. Harman continued that in recent experiments with the instrument he had found that by varying the size of the hole in the screen it was possible to estimate numerically the value of the desire for perfect binocular vision, or what is known as the "fusion faculty." The instrument is well and cheaply made by Messrs. George Culver, Limited, of White Lion-street, London, N.

Dr. **Inglis Pollock** said that he found the diaphragm test of the greatest use in examining patients for reading glasses. It took only a minute to tell whether or no the patient had equal vision in the two eyes and whether binocular vision was present.

Professor **Fuchs** considered the instrument to afford a very good and simple test.

The section then united with the Section of Obstetrics and Gynæcology, and with Dr. **John Campbell** in the chair proceeded to examine the

Report of the Ophthalmia Neonatorum Committee.[1]

In presenting the report Mr. **Sydney Stephenson**, chairman of the committee, said that the committee was a responsible one; it represented many interests. Some of their recommendations were of a far-reaching character and had therefore been referred to the divisions. In this joint discussion their business was recommendation to the Council, not final acceptance of the report.

Dr. **Wendell Reber** (Philadelphia) said there were phases of the subject that appealed greatly to him. In the United States they had benefited greatly by the strenuous work done by Lucien Howe. It struck him that there was a tendency to take the matter out of the control of medical men. This was a danger to be guarded against, particularly in England where so much work was done by midwives. These should not be permitted to use Credé's prophylaxis; in the United States this could only be used by the medical man. Again, they had got much benefit by removing both mother and affected child to the hospital; a child should not be cut off from its proper food at such a critical time. It might seem far-fetched but it was not impossible that the mother who had suffered a vaginitis elaborated within her blood an antitoxin that was beneficial to the child.

Dr. **George Carpenter** (London) spoke as a children's specialist, and pointed out that the loss to the child who was the victim of the disease was not only that of sight but of [illegible] greed that there should be [illegible] And he did not believe [illegible] is. Their only hope was compulsory notification and immediate treatment.

Dr. **A. Nimmo Walker** (Liverpool) objected to the universal teaching of Credé's method by obstetricians. The method was not an absolute protection and it sometimes caused permanent damage. There was a reduction in the incidence of the disease and that was not due to Credé's method but to Listerian cleanliness. He questioned the where diagnosis was uncertain. At the St. Paul's Hospital they had had great success in treatment by taking into hospital both mother and child. Further, their methods had become known to midwives who had learned to send to them infants of suspected mothers, so they could absolutely forestall the onset of the disease.

Dr. **Wallace Henry** said what general practitioners wanted was a definition of ophthalmia neonatorum; without some clear definition notification was impossible.

Mr. **Bishop Harman** said that the report was excellent in its general features. But to get any real success in their efforts after legislation or the application of existing legislation they must create a public feeling on the matter. Government officers and ministers would not take any steps *in advance of public demands, they had to be forced to work*, for independent action only brought them into difficulties. They had been in some degree successful in arousing opinion. Only last year at the International Congress of the Blind in Manchester the subject came up for discussion, with the result that a committee of members of the different blind societies and colleges of the kingdom met and, with the help [illegible] mittee were county councillors and they had exerted useful influence on their colleagues. By such means we could do much. [illegible] difficult [illegible] tion of [illegible] Society made years ago was ample for all purposes: "If the child's eyes become red and swollen and begin to run with matter ......'" Nothing could be more explicit than that. All these cases should be notifiable. Then the bacteriologist of the local authority would examine films and say whether the case was dangerous or not.

Dr. **J. Wharton** (Manchester) said that in his city they had instituted a voluntary system of notification; there had been no difficulties, and its success had been great. Cases had diminished by 40 per cent. and not one eye of those affected had been lost.

Dr. **R. C. Buist** (Dundee) said that notification was like a net—it fished up much that was not wanted, but it was the only means of getting what they did want. Would they give up notification of scarlet fever because some cases were erroneously diagnosed? A few mistakes were balanced by the immensity of the protection afforded to the public.

Dr. **J. H. Taylor** (Salford) entered a protest against the Association issuing a report that was really an attempt to crystallise treatment. Such a thing was fatal to all progress, and it had a futher serious danger in that such a report would be held in the courts of law to represent the opinion of the 22,000 members of the Association. If a man did not use their treatment, but some he thought better, he would run the risk of charge of malpraxis.

Dr. **Cecil Shaw** (Belfast) said that the objections put forward against the notification of ophthalmia neonatorum were just those that had at one time been put forward in the case of diphtheria. The suggestions for treatment given in the report were not prescriptions but only suggestions. He joined in the protest against the haphazard and unrestricted use of strong antiseptics. Recently he had investigated an outbreak of what was thought to be ophthalmia neonatorum; examination of the discharges showed no organisms, and he was convinced that the whole trouble was the result of the abuse of strong perchloride solutions.

Dr. **J. Staveley Dick** (Manchester) said that there should be as *little dogmatism in medical treatment as possible*, and that therefore the suggestions to practitioners were objectionable. Besides the directions were neither Credé's nor scientific in point of accuracy. He moved an amendment that all that part of page 3 of the report that dealt with "suggestions to practitioners" be omitted.

Dr. **Adam Fulton** (Nottingham) seconded the amendment. He objected to the suggestions to practitioners (1) because they were loose and conflicting; (2) because they recommended a proprietary preparation; (3) because they implied that general practitioners were quite ignorant of how to treat such cases. It was a gratuitous assumption of superiority.

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[1] We publish this report on p. 477 of the present issue.

Dr. HENRY said that solicitors' opinion was to the effect that adoption of the suggestions to practitioners would clothe them with almost binding authority in the eyes of the law.

Dr. R. J. JOHNSTONE (Belfast) said the suggestions, if adopted, would only reach those who were already familiar with the subject and not those who might need teaching.

The amendment was put and carried; the motion for the acceptance of the report, so amended, was carried unanimously.

The meeting closed with votes of thanks to the Presidents of the two sections.

TROPICAL MEDICINE.

WEDNESDAY, JULY 28TH.

President, Dr. C. W. DANIELS (London).

The PRESIDENT opened a discussion on

The Persistence of the Tropical Diseases of Man due to Protozoa

by stating that the persistence of the protozoal infection of a single host had to be carefully distinguished from the persistence of protozoa in general. The latter depended on the complex life-history of the parasite, including its sexual development; the former, as far as was known, depended on the length of time during which asexual multiplication could take place without requiring rejuvenescence by sexual reproduction. The great increases in our knowledge of protozoa all pointed in one direction—namely, to an alternation of processes of multiplication, sexual and asexual. In many this was conclusively proved. Dr. Daniels exemplified these processes in the cases of malaria, coccidia, in amœbæ and intestinal flagellates, in spirochætæ and in trypanosomes. In all these cases the disease-causing period of the life of the protozoa was the period when the asexual reproduction was taking place. The sexual forms were harmful, because they were the usual agents in the transmission of disease from one warm-blooded host to others. It was to the sexual development that the peculiar distribution of many tropical diseases was due, but as regards the individual host the sexual reproduction might be ignored. They were therefore limited in that discussion to the consideration of protozoa in their asexual stages. More details of structure of the protozoa must be made out, however, before they could understand many unexplained observations as regards chromatin transformations, especially in the trypanosomes. They were induced to consider sexual reproduction as the ordinary method of multiplication and the asexual as something phenomenal and exceptional, whereas the exceptional reproduction was the sexual, and for long periods only the asexual form occurred. Dr. Daniels illustrated these phenomena and took as an example the proteosoma in birds. In this case they started with infection by parasites which had been rejuvenated by sexual reproduction. An interval of some days took place before any parasites were found in the bird and then only in small numbers; a rapid increase occurred, so that in three or four days after their first appearance 10 or more parasites might be seen in a one-twelfth field. Should the bird survive this, the infection steadily but slowly diminished, and in two or three weeks the parasites again became scanty and the bird recovered. Subsequently parasites might be found in small numbers, but might ultimately permanently disappear. Any parasites seen appeared normal with an average number of spores. The parasites did not increase in number, showing that some influence was at work which, while not arresting the normal multiplication of the individual parasites, caused the destruction of the greater majority of the parasites as they were formed. This influence was not present in the bird when first infected. The phenomenon above referred to might, on the other hand, be explained by assuming that the virility of the parasites became lessened owing to prolonged asexual reproduction. Against this explanation, however, they had the observation that if the blood of the infected bird, whilst but a few parasites were found, was injected into a healthy bird infection resulted, and the same sequence of gradual increase, diminution, and persistence would obtain. Were, again, the blood of the second bird injected into a third a similar phenomenon would ensue, and by the inoculation of a succession of birds proteosoma might be maintained for years without any alternation of sexual reproduction or alteration in the characters of the parasites, showing that it was owing to changes in the host, not to loss of virility of the parasite, that subsidence and disappearance of infection were due. In malaria in man the same series of events occurred, but for how long infection of malaria continued was not yet determined. Blood examination alone could solve the question and more observations were required. In some cases one year in a non-malarial country would see the end of parasites, but in others three years might pass and still malaria parasites might be found in the blood. That this natural cure might be due either to loss of virility in the parasites from repeated asexual reproduction or to a marked increase in the natural resistance and formation of antibodies might be doubted. It was probable that the protective agencies originated and maintained by the parasites themselves were directly concerned in this phenomenon, and should these fail, which might or might not happen, there was no reason against absolute permanency of an infection. The President referred to the development of strains of protozoa differing in their resistance to hostile agencies, and cited as an example strains of Trypanosoma gambiense which proved resistant to atoxyl. The resistance and destruction of the protozoa were, as in bacteria, in the main an affair of alterations in the host, and the time taken varied with different protozoa as it did with different bacteria and with the same bacteria in different hosts. There would appear to be an essential similarity of protozoal infections multiplying asexually and bacterial infections, and in considering protozoa they were prone to lose sight of this fact and to disregard the principles that guide them in bacterial diseases. It must not be forgotten that in countries where reinfection was frequent persons after four years' continuous residence showed a steadily diminishing tendency to become reinfected, whilst after 10 years it was exceptional to find anyone who could be reinfected, showing that a condition inimical to the parasite had been established. That this condition was not a permanent one was proved by the fact that by residence in a non-malarial country where reinfection was not possible, this immunity was lost and reinfection occurred when return was made to a malarial district. After referring to the want of any natural resistance in man to the malaria parasite, and the possibility of intestinal parasites multiplying asexually by fission in the intestine, and throwing off encysted forms which appeared to represent an attempt at a sexual phase, the President concluded by stating that it would be a sounder view to consider protozoa as causes of disease as more on a par with bacteria, and, as with them, to use our efforts to increase the resistance of man to these parasites as well as to endeavour to destroy the parasite.

Dr. A. BREINL (Liverpool) related a case of recurrence of malaria in a patient in which microscopical examinations confirmed the diagnosis after an interval of seven years. The recurrence was coincident with an attack of acute appendicitis. In trypanosomiasis, he said, experimental work showed that after apparent freedom from trypanosomes for even four months artificially induced illness in a monkey caused a reappearance of the parasite in the blood. Dr. Breinl hesitated to compare closely bacteria and protozoa, as the President suggested, and he was convinced that though asexual multiplication might go on for an indefinite period, resistant forms might develop which escape the destructive action of "antibodies" but which after the disappearance of the antibodies resume an asexual multiplication.

Dr. J. L. MAXWELL (Formosa) referred to the difficulty of settling the question of persistence of infection of malaria owing to asexual multiplication in a country where re-infections were possible as in almost all tropical countries. It was therefore in countries such as Great Britain that the matter must be studied.

Mr. JAMES CANTLIE (London) drew attention to the persistence of malaria infection in his own person for three years after returning from the tropics and residing in London. During the hot months of July and August he had persistent fever. During the corresponding period of the fourth year a severe attack of neuritis in the left upper limb seemed to replace the febrile periods of previous years. Drugs had no effect in cutting short the neuritis, and it was only by improving the general health of the host by work in the harvest field that the malaria infection seemed to be destroyed. Mr. Cantlie advocated residence in a cold, dry climate as that best suited to get rid of malaria infection speedily.

Major J. K. RITCHIE, R.A.M.C., considered that in the elucidation of tropical diseases generally they had to look to the physiological chemist rather than to the bacteriologist for information. He believed that change to a cold climate was the best method of getting rid of malaria.

Dr. C. A. STONE (Dooars, India) pointed out that in certain cases of malaria, especially malignant tertian, quinine failed and he questioned whether quinine acted directly on the parasite or in a more roundabout way.

Mr. J. STUART BROOKE (Allahabad, India) considered that residence in a cold climate was the best means of treating persons infected with malaria.

Dr. O. E. MCCUTCHEON (Assam, India) said that by mosquito nets and quinine man could be protected from malaria, but there were many difficulties in the way, especially in the case of children and newcomers to the tropics. I[illegible] with attacks of fever every [illegible] was most unsatisfactory. [illegible]

A Short Study of the Pathology of the Blood in "Verruga."

Fleet-Surgeon P. W. BASSETT-SMITH, R.N. (Haslar Hospital), having received a number of blood films taken from two acute cases of "verruga" in Lima, Peru, gave a minute description of his findings. He described verruga as an infectious inoculable disease of very limited geographical distribution, being endemic in certain valleys in the western slope of the Andes. From its prevalence in the Oroya district it was sometimes spoken of as Oroya fever. The disease was ushered in with fever, the patient complained of gastric pain and cramps; there were swelling of the joints, enlargement of the spleen, and anæmia. After a time, it might be one month to one year from the initial febrile attack, the characteristic granulations appeared on the skin, the mucous membrane, and the internal viscera. The disease attacked men of all colour, and was fatal to the extent of from 10 to 40 per cent. of those attacked. Isquierdo had described a long headed bacillus as being common in the morbid growths and adjacent vessels. The films examined by Fleet-Surgeon Bassett-Smith showed an intense anæmia with an extraordinary abundance of nucleated red cells and a relatively high leucocytosis. No large protozoal organisms were seen in the blood. The red cells showed variations in size and shape, great irregularity of staining; very large and very small red cells showed most chromatic changes. Nucleated red cells were remarkably abundant, with great variation in the character of the nucleus; double and treble nuclei were common, quatrefoils and cinquefoils were seen, as well as rosette-like appearances. A true mytosis of the nucleus was also seen. Besides the meta-chromatism and the basophilic granules in the cytoplasm there were seen in many cells minute rod-like bodies, frequently showing as diplococci from the intense staining of the ends, or as beading from two or more lying end to end; occasionally small, deeply stained rings or pyriform bodies were made out, but no red chromatin spots. It was not certain that these appearances were due to degeneration of the protoplasm, as they differed from the ordinary basophilic granules of anæmic blood; they suggested extraneous pathological bodies causative of the degeneration. The symptoms of verruga, *its limited distribution, specific* nature, and profound blood alterations made it probable that the cause might be an intra-corpuscular organism very minute and difficult to stain.

OBSTETRICS AND GYNÆCOLOGY.

THURSDAY, JULY 29TH.

President, Dr. JOHN CAMPBELL (Belfast).

Dr. E. HASTINGS TWEEDY (Master of the Rotunda, Dublin) initiated a discussion on

Endometritis.

He said that he made the following divisions of the disease: clinically, acute and chronic; anatomically, corporeal and cervical. Acute *endometritis* was always of microbic origin. It might [illegible] diseases of [illegible] metritis. [illegible] proceed on general principles, dead areas of infection should be removed and pus pools drained, and the general bodily resistance should be increased. Before douching a specimen of the discharge should be taken for bacteriological examination and the preparation of a vaccine. Ante- and retroflexion should be remedied. The blunt curette was occasionally useful, especially when there had been repair of the perineum which might be injured by passing the hand. The sharp curette was useless and harmful; it opened up fresh avenues of infection and there was great danger of perforation. The symptoms of chronic endometritis were menstrual disturbances, amenorrhœa, dysmenorrhœa, menorrhagia, passage of clots and casts. Referred symptoms were pain in the back, weakness in the loins, weariness on slight exertion, headache, and dyspepsia. Curetting was the method of treatment in all cases, and in doing it he advised preliminary dilatation. After applying the curette he washed out with a Bozemann's catheter and then swabbed with 1 in 3 formalin on a Playfair's probe, taking care to boil the probe after putting on the cotton wool. He put in a wick of gauze which was retained 24 hours. He kept the patient one week in bed. Mild cases might be treated without curetting by swabbing with 1 in 3 formalin or by the injection of iodine, but he would not do the latter oftener than once in three months, and he deprecated the frequent applications of some gynæcologists. No operation for the repair of the perineum or cervix or for displacement of the uterus should be done without a preliminary curetting. For cervical endometritis he advised partial amputation of the cervix or dilatation of the canal and light application of the cautery. Cases of severe hæmorrhage which could not be cured by curetting were best treated by atmocausis, and he had seen no harm result from that treatment.

Professor J. FEHLING (Strasburg) said that he would separate entirely acute endometritis due to gonorrhœa from the other forms. In treating chronic endometritis he would first separate the cases which were due to general disease and which required no local treatment. He thought in some cases the symptoms were due to narrowing of the cervix brought about by over-zealous cauterisation. He advised the wearing of a flexible intra-uterine tube after dilatation or curetting. He was opposed to frequent cauterisation. In performing curettage it was most important first to ascertain the length of the uterus by the sound and to keep the external hand on the fundus while passing the dilator. He had given up atmocausis. He would not amputate the cervix in fertile women. He treated erosion by the application of the sharp spoon.

Dr. ARCHIBALD DONALD (Manchester) said that there were *many varieties of endometritis*; the most typical form occurred in connexion with mild septic infection after abortion, but cases arose in unmarried women independently of pregnancy or gonorrhœa. In the puerperal case the fundus was large and retroflexed, and these cases were treated on wrong lines by pessaries and plastic operations, curetting being the essential factor in the treatment. The symptoms of endometritis were hæmorrhage, leucorrhœa, dysmenorrhœa, and dragging in the iliac region and hypogastrium. He believed strongly in gauze packing after curetting. As regards erosion, he thought that in the majority of cases it was due to an irritating discharge from the corporeal endometrium; he would treat it by curetting, but in much-thickened cervices he would remove a wedge-shaped piece.

Dr. F. W. KIDD (Dublin) thought that when the cervical canal was inflamed they always found the endometrium to be affected. He had known cases in which permanent amenorrhœa had followed the too vigorous application of the curette.

Dr. F. J. MCCANN (London) said that he combined curetting with a modified rest cure lasting from four to six weeks. He used a blunt curette for the body and a sharp one for the cervix, and [illegible] 50 per cent. chloride of [illegible] te puerperal endometritis [illegible] s to wipe out the uterus.

Dr. THOMAS WILSON (Birmingham) considered that the only indication for curetting was hæmorrhage, and that it was useless for pain or discharge. He found that in all cases in which the cervix was dilated to above No. 13 Hegar, laceration at the internal os occurred. After curetting he applied strong iodine fortnightly for three months.

Dr. THOMAS CULLEN (Baltimore, U.S.A.) said that during four years he had all the uterine scrapings which had been removed in a large hospital practice examined by a pathologist, and in only 48 cases was there evidence of endometritis. From the histological standpoint there was no difficulty in the diagnosis, but clinically it was often impossible to say whether endometritis was present. Uterine discharge was often due to a general systemic weakness, and it disappeared when attention was paid to the general health. He used bladed dilators.

Dr. Alfred Smith (Dublin) said that in puerperal septic endometritis he used the finger and the curette after abortion. He used no intra-uterine treatment in the gonorrhœal form. To prevent laceration he performed a preliminary dilatation by tent.

Dr. Henry Jellett (Dublin) said that he used formalin. He had seen occlusion of the cervical canal after the use of chloride of zinc. He agreed that curetting should accompany plastic operations for retroflexion, and he combined it with Alexander's operation for moveable retroflexion, and ventral fixation when the uterus was adherent.

Dr. F. Edge (Birmingham) dwelt on the advantages of hollow Hegar's dilators, which prevented any possibility of pushing fluid up into the tubes.

Dr. Samuel J. Cameron (Glasgow) said that the most difficult cases to cure were those of gonorrhœal origin, and in these it was unwise to curette.

Dr. Alexander W. Russell (Glasgow) urged the importance of sexual rest in cases of endometritis.

Dr. T. B. Grimsdale (Liverpool) agreed with Dr. Donald that endometritis was the most important factor in cases of retroflexion.

Dr. J. Munro Kerr (Glasgow) had found with Dr. Cullen that in many cases regarded clinically as endometritis little change could be found when the endometrium was examined histologically. Cases in which curetting failed often were really cases of metritis.

Professor Henry Corby (Cork) said that he used bladed dilators, and thought the special value of gauze packing was that it stimulated the uterus to contract.

Dr. E. J. MacLean (Cardiff) thought that lacerations began when Hegar's dilators above No. 9 were used. He had found that cases in which packing was used did not have so easy and afebrile recovery as when a pack was not put in.

The President said that it was impossible to clear out the puerperal uterus by the finger. He used the sharp curette for curetting.

Dr. Hastings Tweedy, in reply, said that he would draw no distinction between acute endometritis due to gonorrhœa and that due to other forms. He used gauze wrung out of 2 per cent. carbolic acid for packing.

Dr. Louise McIlroy (Glasgow) gave a lantern illustration of a series of slides showing

The Development of the Epithelial Elements of the Ovary.

The investigations which they illustrated extended over some months and were assisted by a grant from the British Medical Association. The ovaries used were from human embryos as well as from those of the puppy, kitten, and pig. The speaker claimed to have proved that the so-called Pflüger's tubules were really Graafian follicles with a hollow centre due to the ovum being at a different level or having dropped out. She pointed out that many of the cells in the stroma bore a marked resemblance to those of chorion-epithelioma. She considered that the rabbit's ovary, which was often used, was inferior for research to those of the animals she had investigated.

Dr. David Waterston (Edinburgh) discussed the paper.

Dr. Smallwood Savage (Birmingham) read a paper on

An Ovarian Tumour Clinically Malignant Arising from the Overgrowth of Lutein Cells.

He said that there were three cases of such tumours on record and gave references and particulars. In his case the patient was 38 years of age, a widow and the mother of four children. Menstruation had been regular up to three months before, since when there had been slight irregular losses. There had been pain and loss of flesh for seven weeks. The patient lived five and a half months after operation. The specimen consisted of the right ovary enlarged to the size of a fœtal head. Microscopically some cells were degenerated and vesicular; the nucleus was pushed to the side; the whole structure strongly resembled that of the corpus luteum. The tumour was undoubtedly malignant, the patient dying from cachexia, but without evidence of local recurrence. There was no post-mortem examination.

Professor Fehling said that he had found that in a case of this kind there was a history of hydatid mole.

Dr. Munro Kerr thought that in all cases of malignant disease of the ovaries the uterus should be removed.

Mr. H. T. Hicks (Derby) alluded to the association with hydatid mole.

Dr. Louise McIlroy and Dr. Edge also contributed to the discussion.

Friday, July 30th.

Professor Fehling (Strasburg) read a paper on

The Treatment of Cases of Contracted Pelvis.

He said that the earliest prophylactic treatment was induction of premature labour as advised by Denman. He mentioned special feeding, designed to reduce the size of the child, as suggested by Prochownik, and said that experiments on animals had confirmed Prochownik's views. The putting on of fat took place in the last six or eight weeks of pregnancy, and the dieting would be more likely to have effect if applied then. The second way of obtaining a small fœtus was by the induction of premature labour, and this was especially useful in the simple flat pelvis. He would only use it in multiparæ. He generally induced labour between the 35th and 37th week by using hydrostatic dilators, seeking to obtain cephalic presentations as far as possible. The fœtal mortality in his clinic had been 24 per cent. Walcher's position gave an increase of the conjugate of 1 to 1·5 centimetres, and he had used it successfully in cases of after-coming head. The best means, however, of increasing the available space was by pubiotomy; this gave, with a space between the bones of 4 to 6 centimetres, an increase in the conjugate of ½ to 2 centimetres. For cases in private practice he advised high forceps, and even in some cases perforation of the living child when required in the interest of the mother, but in the clinic if the child's life showed signs of danger he chose Cæsarean section. As regards the technique of pubiotomy, he used Doederlein's or Bumm's; in the former the needle was passed from above downwards, a small incision being first made in the skin; in the latter the needle was entered from below between the labium minor and majus; in each case the Gigli wire saw was used, and the needle was guided by a finger in the vagina. He awaited spontaneous labour after dividing the bone, placed a tampon in the vagina for 24 hours, and kept in a self-retaining catheter for 48 hours. His maternal mortality has been 3·2 per cent. and the fœtal mortality 9·6 per cent. He preferred pubiotomy to symphysiotomy, as the latter gave rise to more bleeding and was more likely to be attended by damage to the urethra and bladder, and he had used pubiotomy after inducing labour if the head became impacted. He mentioned the newer method of extra-peritoneal Cæsarean section, in which, after the abdominal incision, the peritoneum was stripped up off the lower uterine segment; he preferred the longitudinal incision and did not think it mattered if the peritoneum was accidentally opened if the opening was at once closed. The operation must be done when the lower segment was well stretched, and was not suitable for the early stage of labour.

Professor Murdoch Cameron (Glasgow) said that pubiotomy left permanent lameness, and he preferred induction of labour by bougies.

Dr. Munro Kerr had not found induction of labour satisfactory, and the fœtal mortality from high forceps in his hospital had been 50 per cent. He emphasised the great importance of leaving cases to nature as long as possible, and he had seen spontaneous labour with a conjugate of 3 inches. He thought pubiotomy extremely valuable and that it was especially indicated in cases where one thorough attempt at forceps delivery had proved unsuccessful. Pubiotomy was very undesirable in primiparæ, and there were cases in which it was justifiable to perforate the living child, especially when the genital canal was infected.

The Master of the Rotunda said that the pelvis was often inaccurately measured. There was only one reliable means of measurement, and that was Skutsch's pelvimeter, which required an anæsthetic. In serious contraction Cæsarean section was the only operation possible, but it must not be forgotten that the uterine scar might be a source of subsequent danger. They should act when the fœtal heart were still some cases in which perforation of the living child would be justifiable in private practice.

Professor **Fehling**, in reply, found that patients could walk perfectly well after pubiotomy even when there was failure of bony union. He measured the pelvis with fingers under anæsthesia.

Professor **Murdoch Cameron** read a paper on

Cases of Dystocia due to Ventral Fixation of the Uterus.

He narrated two cases; in each the os was high up and could only be reached by introducing the whole hand into
to be treated by embryotomy.
ses in which ventral fixation was
be tied and divided to sterilise
the woman and avoid these risks.

Professor **Jacobs** (Brussels) thought that ventral fixation
He had seen three fatal
y the fixation band.
xation should be done low
down on the anterior wall to prevent such an accident.

ANATOMY AND PHYSIOLOGY.

Wednesday, July 28th.

President, Professor C. S. **Sherrington** (Liverpool).

The **President** gave a brief introductory address, in the course of which he referred with regret to the absence of Professor Symington. He said that it had been decided to hold a joint meeting of anatomists and physiologists this year, and in view of this the officials of the section had sought for discussion subjects which might be discussed by the mixed audience, from both the structural and functional points of view.

Professor A. F. **Dixon** (Dublin) then read a paper on

The Anatomy of the Achondroplasic Skeleton.

This was illustrated by lantern slides, photographs, and dried bones. Professor Dixon referred in particular to two adult

did not escape. *Of the former, those bones which began to* ossify early were most affected. Hence deformities were very marked in the long bones, while short bones, as those of the carpus and tarsus, showed very little abnormality indeed. Further, the amount of deformity in the different parts of a long bone bore some relation to the relatively early times at which ossification appeared in them. Thus the shaft of a long bone was the seat of chief deformity in it; the epiphyses were but little different from normal. The striking changes found in long bones were these. The shafts were markedly shortened and thick, while the ends were almost normal in size. The natural curves were exaggerated; muscular markings were unusually prominent. In the skull the base was found to be much contracted, especially in an antero-posterior direction, while the membranous part of the cranium, actually very little affected, appeared by contrast

into the cranial cavity, so that the foramen magnum was about on a level with the external auditory openings. The foramina in the skull base were abnormally small. The different angles of the base were much changed. The clivus, the most contracted part of the base, presented an unduly steep slope. A variable amount of ankylosis between the skull and the atlas was found, although no obvious limitation of nodding movement might have been observed during life. Professor Dixon, in speaking of achondroplasia as particularly affecting bones ossified in cartilage, drew attention to the fact that he had found the clavicles to be practically unaffected. Indeed, in one case clavicle and radius were of the same length.

Professor C. J. **Patten** *(Sheffield) asked as to Professor* Dixon's experience of an absence of symmetry between corresponding bones of opposite sides in cases of achondroplasia.

described the changes in shape found in these and compared them with those found in achondroplasia. He remarked upon the absence of change in growth in the case of the vertebral column, coupled with great changes in the skull in the achondroplasic skeleton, and asked whether Professor Dixon had found associated changes in the genital glands,

had met
d shapes
resembling achondroplasic skulls, and asked as to any
ctions, or between achondro-

at about 17 to 21 *years of*
predominate.

Dr. N. C. **Rutherford** (Edinburgh) asked how the membrane bones of the face were affected, and spoke anent the alleged connexion between the pituitary body and achondroplasic changes.

Professor **Peter Thompson** (London) also spoke of the condition of the hypophysis and its possible effect on growth.

The **President** remarked upon the greatly developed markings for muscular attachments in some bones shown by Professor Dixon. He would expect them to be marked in some proportion to the duration of the muscular strain upon them, and hence would look to find them prominent in the case of postural muscles, such as were attached to the femora.

Professor **Dixon**, replying, said he had deliberately confined his paper to cases exhibiting symmetrical deformities. In the two cases described he had not recognised any changes in the genital glands. The brain showed a slight degree of hydrocephalus. The cranial capacity was very variable. The membrane bones of the face were slightly affected and the entire face seemed to be pushed back underneath the cranium. He had not found microscopic changes in the pituitary body. The cancellous tissue resembled that of normal bone. The condition of achondroplasia was found in families, but was probably not inherited through the female line.

Dr. Robert H. **Scanes Spicer** (London) read a paper on

Some Points in the Mechanics of Respiration.

For the convenient illustration of some of his remarks he showed a rough model representing the larynx and vertebral column, *showing alterations in shape and relations of* these parts during respiration. Costal and abdominal types of respiration were described and compared, the latter being condemned as bad. It prevented proper voice-production and was chiefly responsible for voice troubles in singers and speakers and tended to impair health. Different views had been held as to the movement by which the vocal cords were stretched. Dr. Scanes Spicer held that this was a movement of the cricoid cartilage upon the thyroid and not *vice versâ*. Respiration involved strains upon different parts of the larynx. These were in a degree limited or neutralised by movements occurring around the transverse crico-thyroid axis, and hence its importance. In proper breathing (costal type) the larynx practically, he thought, made no excursion up and down, and the vertebral column tended to straighten itself out. In abdominal breathing, especially if deep, the *vertebral column behind the larynx had its forward convexity* increased, the larynx underwent an up-and-down excursion, and at the same time was so tilted around its transverse axis that the cricoid cartilage projected backward. The bosses on the back of this, uncovered by muscle, were brought unduly against the vertebral column, and by their movement (as parts of the larynx) up and down over the sharp points and ridges on the front of the column a mild but long-continued frictional irritation was kept up, which probably played a part in determining the incidence of cancer in this situation.

Professor **Thompson** declined to regard the model as correctly representing the movements occurring in nature. It was easy to move a model and to say, "This is what occurs." It
orrect.
He objecte
upon
abdominal
s but
normal, and agreed with Professor Keith's views. It was the type which obtained in quiet breathing, as in sleep. Costal respiration came markedly into play when an extra effort

was required. The diaphragm took part in both types; it descended and it raised the lower ribs. He knew of no bony points on the vertebral column such as Dr. Scanes Spicer mentioned. In the recent state the front of the column was made smooth by the anterior common ligament and other soft tissues.

Questions were asked and remarks were made by the PRESIDENT, Dr. J. S. DICKEY (Belfast), Dr. RUTHERFORD, and Dr. WATERSTON as to the effect of costal respiration on laryngeal movements, the relative frequency of throat cancer in the two sexes, and in relation to pregnancy in view of the prevailing types of respiration involved.

Dr. SCANES SPICER, in reply, recommended the use of the terms "belly-breathing" and "back-breathing" instead of abdominal (diaphragmatic) and costal. Back-breathing was the right type and should be cultivated. He quoted Sir Felix Semon's figures as to the frequency of throat cancer in the two sexes.

Dr. HUGH MACLEAN (Liverpool), in a paper on

Phosphatides,

indicated how little was definitely known of these bodies. Widely distributed, he said that they existed in all tissues, especially such active tissues as brain and heart, and they could be extracted by suitable agents—e.g., ether. They were nitrogenised, phosphorised fatty acids, of the rôle of which in metabolism but little was known. They were very oxidisable, and acted as aggravators of hæmolytic poisons. They occurred in yelk of egg in variable quantities. For experimental purposes he obtained three grammes of phosphatides in an ethereal extract of 100 hen's eggs. With this he made many experiments to ascertain the chemical structure and relations of phosphatides. As a result, he concluded that they probably played an important part in the normal desaturation of fatty acids in the body. They could be divided into various groups according to the proportions of nitrogen and phosphorus present. Of the first group, in which the proportions of nitrogen and phosphorus were as 1 to 1, lecithin was the best-known example. Of many of the groups practically nothing was known. Dr. Maclean was unable to determine in detail the nitrogen combinations in phosphatides. His observations, however, satisfied him that the generally accepted formula of the phosphatides' chemical structure could not be taken as entirely correct.

Dr. REID HUNT (Washington, U S.A.) described experiments which he had made upon the phosphatides to ascertain their chemical structure.

Professor B. MOORE (Liverpool) mentioned hypotheses as to the different composition of phosphatides and referred to their effects upon blood pressure and metabolism.

Professor T. H. MILROY (Belfast) made a few remarks.

There was general agreement as to the slightness of knowledge about phosphatides and the width of the field which they offered for further research.

PATHOLOGY.

THURSDAY, JULY 29TH.

President, Professor W. ST. CLAIR SYMMERS (Belfast).

The section was joined with the Section of Hæmatology and Vaccine Therapy for a discussion on "The Early Diagnosis and Treatment of Pulmonary Tuberculosis." We report this debate under the proceedings of the latter section.

FRIDAY, JULY 30TH.

Dr. A. E. MOORE (Cork), Vice-President of the section, took the chair, whilst the President of the section read a paper by Dr. L. COBBETT (Cambridge) on

The Portals of Entry of Tubercle Bacilli into the Body in the Causation of Phthisis.

Dr. Cobbett said that the object of his experiments was to find out (1) whether bacteria could gain entrance to the lungs directly through the air passages; and (2) whether, after being absorbed from some part of the alimentary canal, they could pass at once through the lymphatic glands and gain entrance to the lungs. The general intention of the experiments was to throw light on the question of the portals of entry of the tubercle bacilli into the human body in the causation of phthisis. The experiments were divisible into three groups—namely, those made (1) with particles of carbon; (2) with bacillus prodigiosus; and (3) with bacillus tuberculosis. The animals used were guinea-pigs, except in a few instances, in which rabbits and mice were employed. The results might be briefly summarised as follows: (1) Feeding experiments with particles of carbon (25 experiments). (*a*) Young guinea-pigs fed with Indian ink or lamp-black on one or more occasions showed no pigmentation of mesenteric or cervical lymphatic glands, and no pigmentation of lungs or bronchial glands, except in two experiments, when the conditions were such as did not exclude the possibility of the pigment being inhaled directly into the lungs. (*b*) Feeding adult guinea-pigs in a similar manner resulted in no pigmentation of the mesenteric or cervical glands nor of the lungs or bronchial glands; such pigmentation as was found in these latter situations in some of the guinea-pigs fed with carbon being equalled in other animals of corresponding age which served as controls, as some degree of pigmentation of lungs and bronchial glands in normal guinea-pigs of 500 grammes and over was found to be common in Cambridge. The results of these experiments were directly opposed to the belief that pigmentation of the lungs was of intestinal origin, and suggested the possibility that spontaneous pigmentation might sometimes have been mistaken for the result of an experimental feeding with carbon. (2) Experiments with bacillus prodigiosus. (*a*) Cultures were made from a large number of organs and glands of 26 animals exposed to a spray containing the bacillus In all the more recent experiments the spray used was of the finest description, and was continued only for one or a few minutes. It scarcely sufficed to produce any perceptible wetting of the coats of the animals. Bacillus prodigiosus was cultivated from the extreme marginal portions of the lung of all these animals in which the interval between spraying and death did not exceed 15 hours. In two instances the animals ceased to breathe within three and five minutes respectively of the commencement of the exposure to the spray. The bacillus did not fail to reach the lungs after the œsophagus had been ligatured in two places and divided. The bacillus reached the bronchial glands in ten hours, if not earlier, but was not found in them after the fifteenth hour. It was twice found in the mesenteric glands and once in the cervical. It was invariably absent from other parts of the body, except in the case of one of the earlier animals, which was entirely exceptional. (*b*) 14 guinea-pigs were made to swallow large quantities of bacillus prodigiosus, they were killed after intervals of from 3 to 14 hours, and cultures were made from their organs and glands. In the case of about half the guinea-pigs one or two colonies appeared in one or more of the four tubes sown copiously with lung emulsion. It was, however, by no means certain that these reached the lungs after being absorbed from some part of the alimentary canal, for it seemed probable that the bacilli did not survive long enough in the stomach and intestines to do so—only rarely could a colony of bacillus prodigiosus be cultivated from their contents; and in not one of these experiments did bacillus prodigiosus appear in the cultures from the mesenteric glands. Once, however, a single colony appeared in a tube sown from the submental gland. Observing the frequency with which guinea-pigs make a choking noise when feeding, and especially when fed artificially, there was no difficulty in believing that the bacilli in question had reached the lungs directly by the air passages. Intertracheal injections of small quantities of these bacilli were followed by their appearance in the margins of the lungs. (3) Experiments with bacillus tuberculosis. 13 feeding and 14 inhalation experiments were undertaken. The former were by no means complete. The results were, on the whole, similar to those obtained after feeding with bacillus prodigiosus, and their interpretation awaited further experiments. When guinea-pigs were fed with tubercle bacilli and allowed to live some weeks tuberculosis appeared first in the mesenteric or cervical lymph glands and no disease appeared in the lungs until it became generalised elsewhere. The spraying experiments clearly showed that tubercle bacilli suspended in the air could readily penetrate deeply into the lungs. When the animals exposed to the spray were killed a few minutes or hours after and their emulsified organs injected into other guinea-pigs tuberculosis was invariably produced by the lung emulsions. A much less severe tuberculosis was in some cases produced by the bronchial or mesenteric glands. When guinea-pigs exposed to the spray of tubercle bacilli were allowed to live from one week to a month and then killed and examined tubercle bacilli were found in large numbers in the lungs before any lesions appeared anywhere. Elsewhere they were absent, except in small numbers in the bronchial and cervical lymph glands. Tuberculous lesions first appeared in the lungs, then in the bronchial glands, after which they were found in the portal lymph gland and the spleen. The mesenteric glands invariably escaped tuberculosis, but in one case (out of ten) three tubercle bacilli were seen 14 days after exposure to the spray. In conclusion, Dr. Cobbett said that the experiments as a whole were not yet completed, but they clearly showed already that in the guinea-pig bacilli suspended in the air readily passed down the bronchi deeply into the lungs. The experiments were not sufficiently advanced to justify any conclusions as to the course of infection which followed the introduction of tubercle bacilli into the alimentary canal.

The PRESIDENT pointed out that Dr. Cobbett had obtained results diametrically opposed to those yielded by the experiments of himself and Sir William Whitla, and consequently the final conclusions of Dr. Cobbett would be awaited with great interest by those who maintained, like himself, that food and not air was the usual vehicle of the tuberculous virus.

Dr. W. FORD ROBERTSON (Edinburgh) and Dr. MARGARET C. W. YOUNG (Edinburgh) presented their observations made in connexion with

The Protozoal Origin of Tumours.

The communication resolved itself into a demonstration of three distinct series of lantern slides; the first giving schematic representations of the life cycles of hæmamœba and other parasitic protozoa, contrasted and compared with the hypothetical life cycle of Robertson's silver-cyanide protozoon (for which the name "neucloamœba" was suggested). The second demonstrated the cyanide-fast bodies observed in Jensen's mouse tumours, and the third similar bodies found in cancer cells in the human subject—these last two series being arranged to demonstrate appearances and phases in agreement with stages in the hypothetical life cycle of the authors' micro-organsim. A comprehensive series of water-colour drawings of the microscopical appearance described by the authors, and several microscopical sections were exhibited in an adjoining room.

Dr. J. M. BERNSTEIN (London) pointed out that in the early stages of the study of pathogenic protozoa, silver-staining methods were deemed essential for their demonstration, but that subsequently it was found possible to avoid the fallacies introduced by silver methods by employing the eosin methylene-blue compound devised by Romanowski and its various modifications, such as Leishman's. He inquired whether Dr. Robertson's protozoa could be demonstrated by these stains.

Dr. ROBERTSON explained that his bodies could only be satisfactorily shown by the special silver process which he used, and in which all the fallacious appearances inseparable from other silver processes were eliminated.

Professor E. J. MCWEENEY (Dublin) read a paper on

The Value of Coloured Substrata for the Detection and Differentiation of Members of the Typho-coli Group.

The speaker said that in view of the great epidemiological importance of typhoid carrier cases and of the etiological relationship of non-lactose-fermenting bacilli of the Gaertner group to outbreaks of meat poisoning, any method which would admit of the speedy recognition of such organisms on our culture plates would constitute a welcome addition to bacteriological technique. There were two ways of accomplishing the desired object—viz., by substrata, which should either (1) cause the bacteria which do not ferment lactose (typhoid, paratyphoid, dysentery) to assume a distinctive appearance, or (2) suppress as completely as possible the growth of the ordinary lactose fermenting coli organisms, so as to allow the relatively few non-lactose fermenters to appear prominently on the plate. The methods are not mutually exclusive and may be combined in the same medium. In order to test the relative values of the several methods that had [illegible]

or nearly so, coli bright red), but which did not suppress the growth of coli. 3. A modification of No. 2 by Gaehtgens, which consisted in adding caffeine, a substance known to inhibit bacillus coli. 4. Conradi's new picric acid brilliant green agar. 5. A modification of this by Colonel H. B. Fawcus, described in the *Journal of the Royal Army Medical Corps*, and consisting essentially in the addition of lactose and bile-salt with a less strongly acid reaction. 6. China green agar—viz., an ordinary 3 per cent. agar neutralised to + 13 on Eyre's scale, with 1·4 to 1·5 cubic centimetres of a 0·2 per cent. solution of China green (Grübler) added to each 100 cubic centimetres contained in a flask. This colouring matter was introduced into bacteriology by Werbitzki in the *Archiv für Hygiene* for this year. The speaker exhibited two series of cultures on 6-inch Petri plates on each of these media. One series was inoculated with the fæces of a typhoid case [illegible] same age and the same amount of stool was used for each. The most satisfactory results were obtained with the China green agar, which suppressed about 75 per cent. of the coli colonies, whilst the survivors were much inhibited in their growth, remaining small, opaque, and point-like. The typhoid colonies, on the other hand, developed most luxuriantly and were decidedly more numerous than on any of the other media. Their appearance, moreover, was very characteristic, being of a delicate transparent green, deeper in the centre, with a thin filmy peripheral layer that spread out like a veil over the substratum and presented under a low power a typically sulcate appearance. The only obvious drawback to this medium was the fact that the motility of the bacilli taken from these typhoid colonies was much diminished and they presented a filamentous aspect. Subcultures in broth, however, were in all respects typical by the next day and could be subjected to the usual agglutination and other tests. Next to the China green in point of value came the Conradi brilliant green picric acid medium, which admitted of unrestricted growth of typhoid organisms whilst largely restricting that of bacillus coli. The distinction, moreover, was fairly well marked, the coli colonies being of an opaque greenish-yellow, whilst those of typhoid were more transparent, colourless, larger, and thinner. Their motility and agglutinability were preserved. The speaker's experience of the Fawcus modification being founded on the results obtained from a single batch of medium was not large enough to enable him to make a positive statement as to its value. So far, however, he had noticed that together with a very decided inhibition of bacillus coli the typhoid colonies also were to some extent interfered with, and did not assume definitely marked character until 48 hours had elapsed after inoculation. Nor did they seem so numerous as on the China green. The presence of a cloudy appearance around the coli colonies did not appear to possess any marked advantage, as there was little danger of mistake. As to the original Drigalski and Endo media it was unnecessary for him to speak, as the results were such as might have been expected. On both, the coli colonies occupied the plates to such an extent as to leave little room for the development of typhoid, unless indeed the latter were pretty numerously represented. It was interesting to observe that the Endo medium permitted the growth of large numbers of yeast colonies which did not come up on any of the other media. With a view to demonstrate the appearances of the several members of the group on these media in pure cultivation, he had prepared and now demonstrated a series of plates inoculated with bacilli typhosus, coli, lactis aerogenes, paratyphoid B and A, the speaker's strain of Gaertner's bacillus from the Limerick food-poisoning case, Ratin's and the Flexner and Shiga types of dysentery. The inhibition bacillus of coli was strikingly evident on the Conradi, Fawcus, and China green media, and it was interesting to observe that the two dysentery types were equally repressed. There was no distinction between the Gaertner and Ratin organisms, both of which grew luxuriantly on all the media. In view of the unsatisfactory nature of our present methods of isolating typhoid bacilli from suspected milk, he had been experimenting by infecting milk in quantities of 100 cubic centimetres with typhoid fæces known to contain the bacilli, adding the same amount of China green solution as proved suitable for plate cultures (1·5 cubic centimetres of a 0·2 per cent. solution), and setting aside at 37° to develop for 24 hours, and then plating out on Drigalski's and Endo's media. So far, however, he had not succeeded in obtaining typhoid enrichment in this way. He concluded by recommending China green to the attention of those interested in this class of work.

Dr. Moore then vacated the chair in favour of Professor McWeeney, and

Professor BENJAMIN MOORE (Liverpool) and Dr. W. R. STENHOUSE (Liverpool) described the results of their experiments on

The Growth of the Bacillus of Tuberculosis and other Micro-organisms in Increased Percentages of Oxygen.

In the course of their work they had encountered many difficulties owing to the gradual escape of oxygen from the apparatus in which their culture tubes were exposed. Finally, by placing the cultivations in a glass dish and inverting over them a bell jar, sinking its mouth into a ring of putty, and then filling up the space between the wall of the bell jar and the wall of the containing glass dish with mercury, they were able to maintain an atmosphere of pure oxygen for a considerable period. 37 organisms in all were investigated as to their rate of growth in atmospheres containing varying percentages of oxygen, and of these three species—viz., bacillus tuberculosis, bacillus pestis, and staphylococcus pyogenes aureus—were completely inhibited in their growth. The remaining 34 species differed in no respect from the control cultivations grown under ordinary atmospheric conditions.

Dr. W. S. LAZARUS-BARLOW (London) then occupied the chair and commented upon the fact that of 28 species of bacteria which he had investigated with reference to radio-activity two only—bacillus tuberculosis and staphylococcus pyogenes aureus—had exhibited radio-active properties when placed in contact with the photographic plate, bacillus pestis being absent from the series he examined.

Dr. W. J. WILSON (Belfast) read a paper on

Heterologous Agglutinins, more particularly those Present in the Blood Serum of Cerebro-spinal Fever and Typhus Fever Cases.

His results confirmed and extended observations previously made by Professor Symmers and himself in regard to the agglutination of organisms of the typhoid, colon, and alcaligenes groups by the blood serum of cerebro-spinal fever cases. These heterologous agglutinins are not removed from the blood serum on saturation of the latter with the infecting micro-organism (i.e., the meningococcus), and on this account must be distinguished from group agglutinins (Pfaundler) and mitagglutinins (Wassermann). The heterologous agglutinins increase during the disease and their course of development follows closely that of the meningococcal agglutinins, though to this rule there are many exceptions. They may still be evident in a very high dilution of the serum—e.g., 1 in 2000. The blood serum of a horse which had been immunised against the meningococcus was much richer than normal horse serum in agglutinins, not only for the meningococcus but also for the bacillus aquatilis alcaligenes. Of 31 specimens of serum taken from Belfast cases of typhus fever and examined as to their action on the bacillus typhosus 18 gave a positive and 13 a negative reaction with a 1 in 50 dilution of the serum. Seven cases of typhus fever had five times the agglutinative power of normal serum on a variant form of the bacillus coli communis which had been isolated from the fæces of one of the cases.

After some remarks on this communication by Dr. LAZARUS-BARLOW and Professor MCWEENEY had been replied to by Dr. WILSON, a paper detailing the results of studies upon

The Etiology of Bacillary Dysentery

was communicated by Dr. MARC ARMAND RUFFER (Alexandria) and Mr. J. GRAHAM WILLMORE (Gabel El Tor). The material for their investigations had been derived from Mussulmans landed at El Tor during the pilgrimage season and amounted to many hundreds of cases. Etiologically considered, these cases belonged to two distinct groups—amœbic dysentery (due to infection with amœba histolytica alone or in association with a bacillus provisionally designated bacillus dysentericus "El Tor No. 1") and bacillary dysentery. Of this latter group Dr. Ruffer and Mr. Willmore recognised five types, according to the organism apparently concerned in the infection: (*a*) bacillus dysenteriæ of Shiga-Kruse type (comparatively rare); (*b*) bacillus pseudo-dysentericus "D" of Kruse; (*c*) bacillus dysenteriæ of Flexner (one case only); (*d*) bacillus dysentericus El Tor No. 1; (*e*) bacilli resembling but not identical with [illegible] monest type of dysente[illegible] that due to bacillus dys[illegible] could not be distinguished by clinical signs or post-mortem appearances from cases due to bacillus dysenteriæ of Shiga-Kruse, and the diagnosis depended entirely on the isolation of the bacillus or on the result of agglutination experiments, as those cases agglutinated bacillus El Tor but not the Shiga-Kruse bacillus. The diagnosis was exceedingly important, as treatment with the Shiga Kruse antiserum was useless, although this serum was of extreme value in cases of dysentery due to the Shiga-Kruse bacillus. Dr. Ruffer and Mr. Willmore devoted themselves to a most complete and careful study of its cultural, biochemical, and pathogenic characters. The various serum reactions, agglutination, absorption, and complement deviation of bacillus El Tor were next detailed, from which it appeared that it was most nearly allied with Kruse's bacillus pseudo-dysenteriæ D.

Professor MCWEENEY complimented Mr. Willmore on the care and completeness with which he had studied the various forms of bacillary dysentery. The outcome of this work seemed to be that as the result of the complex relations that existed between the intestine and its flora an indefinite number of inter-connected bacillary races or sub-species were evolved. Some of the more commonly occurring of these had been isolated and studied under the names of Shiga, Flexner, pseudo-dysentery, bacillus El Tor No. 1, and so forth, but these were, in his opinion, certainly linked together by an unbroken chain of intermediate forms, and it was only by painstaking studies, such as that brought forward by Mr. Willmore, that the links which were now missing from the chain would be supplied.

The work of the section was then declared at an end in a short valedictory address by Dr. LAZARUS-BARLOW.

DERMATOLOGY AND ELECTRO-THERAPEUTICS.

THURSDAY, JULY 29TH.

President, Dr. W. CALWELL (Belfast).

The following cases were exhibited:—By the PRESIDENT: (1) Adenoma Sebaceum; and (2) Pityriasis Rubra Pilaris. By Mr. G. L. ST. GEORGE (Lisburn) and Dr. G. MONCRIEFF MELVILLE (Youghal): Acanthosis Nigricans. By Dr. S. W. ALLWORTHY (Belfast): Cutaneous Actinomycosis. By Dr. J. CAMPBELL RANKIN (Belfast): (1) Xeroderma Pigmentosum; (2) Lupus Vulgaris, showing result of a plastic operation on the nose; (3) Epithelioma of the Wrist and Senile Keratosis of the Face. By Dr. F. MCLIESH (Belfast): Lupus Vulgaris, of short duration, with ectropion.

A large number of excellent casts and photographs of skin diseases were exhibited in the Pathological Museum by Dr. G. G. STOPFORD TAYLOR (Liverpool) and Dr. R. W. MACKENNA (Liverpool).

Sir MALCOLM MORRIS (London) then opened a discussion on

Mucous Membrane Lesions in Cutaneous Disease.

He said that affections of the mucous membranes might be considered under the headings of (1) primary and (2) secondary. The latter group could be subdivided into (*a*) cases in which the mucous membranes were affected independently of the skin; (*b*) cases in which they were affected by extension from the skin. Having briefly referred to the specific fevers, in all of which the mucous membranes were involved, he enumerated the various drugs—arsenic, chloral, belladonna, mercury, salicylates, iodides, and others—in which lesions occurred in the mucous membranes. Among general infections, syphilis imitated almost every form of disease, and characteristic lesions were found in the mucous surfaces in the primary and secondary stages of the disease. Leucoplakia was an independent disease and not [illegible] in origin. In lupus vulgaris the startin[illegible]e; in 70 to 80 per cent. of Fins[illegible] of the mouth or nose were [illegible] the [illegible] applica- diagnosis of lupus of the [illegible], the tion of adrenalin, as suggested by Dr. St. Clair [illegible] blanching of the mucous membrane causing the lupus nodules to stand out clearly. Lupus might extend up the lacrymal

-duct, the pharynx and larynx might be involved, and the tympanic membrane might be affected through the Eustachian tube. Lupus of the tongue was very rare. Sir Malcolm Morris had seen a case in which the vagina and os uteri were the sites of lupus. It was now thought probable that leprosy tended to show itself first in the nose and pharynx. He had recently had a case of early anæsthetic leprosy in which an ulcer was found in the left nostril, and bacteriological examination showed the presence of acid-fast bacilli in large numbers. Leprous nodules might form in the conjunctiva, or the tongue might be affected with lesions resembling syphilis. In anæsthetic leprosy the mucous membrane of the palate and other [illegible] As regarded skin diseases proper, [illegible] from intestinal toxæmia; erythema [illegible]ered in by congestion of the throat and pharynx. In urticaria, the eyelids, lips, mouth, tongue, glottis, and vulva might be the sites of wheals. Urticaria might alternate or be concurrent with asthma. In urticaria pigmentosa the mouth might be affected. Pemphigus often attacked the mouth or mucous membrane of the bronchial tubes, but Sir Malcolm Morris could not confirm the statement that pemphigus vulgaris might begin in the mouth. In pemphigus foliaceus, however, the mouth, or labia majora or minora might be the first parts attacked. Dermatitis herpetiformis was sometimes accompanied by lesions in the mouth or vagina, and the speaker had published a case in which lesions first occurred on the tongue (water-colour drawings illustrating these and other cases were shown). In epidermolysis bullosa bullæ might form on the mouth and lips, and in each of three children in a family observed by the speaker there were lesions in the mucous membrane of the mouth, whilst in one the intestinal tract was affected. He had recently seen a case of this disease with a well-developed bulla in the mouth, probably caused by eating toast, and he had also had a case in a patient, aged 60 years, which had been called pemphigus by the late Sir William Gull. Catarrhal herpes affected the lips, tongue, and genital organs; it was often the result of external irritation. Herpes zoster might attack the eyeball, and vesicles were occasionally seen on the tongue. Eczema might spread to mucous membranes. The red part of the lips might be involved in seborrhœic eczema and become covered with crusts. Lupus erythematosus inside the lips and cheeks often resembled leucoplakia or lichen planus. The conjunctivæ and larynx were occasionally affected, and Wilfred Warde held that rhinitis and lesions of other mucous membranes were often associated with lupus erythematosus. Lichen planus was not infrequently seen on the tongue and inside the mouth and often resembled leucoplakia. These lesions might precede the skin eruption, as in a case observed by Sir Malcolm Morris, in which such lesions occurred two years before the skin was affected. The disease occurred in the vulva in the form of milk-white patches on the inside of the labia. Wandering or geographical rash on the tongue was a harmless disease and had never been seen by the speaker in association with any disease of the skin. As regards psoriasis, Sir Malcolm Morris could not confirm Fordyce's experience that it might affect mucous membranes. In tinea circinata and in a few cases of sclerodermia the disease had been known to spread to mucous surfaces. Rhinoscleroma might also spread to the mucous membrane of the nose. Acanthosis was another rare disease in which the mucous membranes of the mouth and vagina might be attacked. Sir Malcolm Morris briefly referred to the treatment of affections of mucous membranes; it should be directed to the disease of which the mucous membrane lesions formed a part. Strong caustics should be avoided and a weak chromic acid solution (5 per cent.) was often beneficial.

The subject was discussed by Dr. LOUIS WICKHAM (Paris), Professor R. B. WILD (Manchester), Dr. J. GOODWIN TOMKINSON (Glasgow), Dr. J. H. SEQUEIRA (London), Dr. H. H. B CUNNINGHAM (Belfast), Dr. S. E. DORE (London), and the PRESIDENT.

Sir MALCOLM MORRIS replied.

Dr. J. GOODWIN TOMKINSON read a paper on

The Ætiology and Treatment of Pruritus Ani,

which was discussed by Dr. F. HOWARD HUMPHRIS (London), Dr. J. METCALFE (Bradford), and Dr. A. W. LOXTON (Birmingham).

Professor R B. WILD read a paper, illustrated by photographs and microscopical sections, on a case of

Acanthosis Nigricans.

Mr. G. L. ST. GEORGE (Lisburn) and Dr. G. MONCRIEFF MELVILLE (Youghal) read a paper on another case of the same disease, with photographs and sections, the patient having been shown earlier in the meeting.

FRIDAY, JULY 30TH.

The proceedings were opened with a discussion on

The Supposed Risks attending the X Ray Treatment of Ringworm.

Mr. R. HIGHAM COOPER (London), introducing the question, divided his subject into two parts: (1) injuries to the scalp; and (2) injuries to the brain. He said that injuries to the scalp could not be called "supposed" risks, as most workers had, unfortunately, come across one or more instances, but these were now happily rare since Sabouraud introduced his admirable technique. He (the speaker) had met with four distinct varieties of scalp injuries: (1) Visible [illegible] and (4) permanent alopecia unaccompanied by visible dermatitis. The second and third were the varieties commonly found and were due to overdosage. The first was due to the use of too soft and the fourth to that of too hard a tube. It was very necessary to keep the vacuum of the tube within certain limits, and he suggested the following methods. A tube was used which was fitted with a mica disc regulator. The wire attached to this was pushed down until the end of it was three inches from the cathodal terminal. Suppose the tube to be very hard, some of the current would pass round through the auxiliary tube, and, although it might not lower the vacuum, yet none of the injurious penetrating rays were produced and treatment might be continued, the only disadvantage being the increased time it would take on account of the waste of current. The operator must guard against the vacuum becoming too low by stopping treatment, not when the tube became blue, but when it showed signs of reversals. Another method was to fix a piece of metal on an ampèremeter in the primary circuit in such a position that the needle when it indicated a certain ampèrage completed an electric bell-circuit (or, by inserting a relay, cut out the current to the primary of the coil). The use of this depended upon the fact that more current passed through the tube when it became soft, and *vice versâ*. A hot-wire ampèremeter must be used, as the oscillations in other types would spoil the experiment. Turning to supposed risk of injury to the brain, Mr. Cooper said that out of all the tens of thousands of cases treated during the past six or seven years not a solitary case of injury had been reported. He had carried out experiments on the lines of those recorded by Dr. J. M. H. Macleod in THE LANCET of May 15th last, and was pleased when he saw Dr. Macleod's paper to note that their results were identical. He would not describe his experiments on the effects of a single dose upon the cortex immediately beneath, beyond saying that the dose was about one-twentieth of a pastille. He had imagined that there was some part of the brain which (during a total epilation) would receive some rays from each exposure and be more affected than the brain *immediately* beneath the cranium in a single exposure. He had experimented with a cranium by a method which he described. He concluded that there was a spot at which a number of rays converged, but that at that spot the actual dose received was about one seventy-fifth of a pastille. The whole question of risk depended upon the least dose of X rays which could possibly cause harm. He had always regarded anything less than one pastille dose as *stimulant*, one pastille dose or a little more as *temporarily inhibitive*, and a greater dose than that as destructive. He concluded that in cases of ringworm, if the brain received a dose which could produce any effect at all, it could only be evanescent and of a stimulating nature. He concluded that there was no risk of injury to the brain, and, where Sabouraud's instructions were faithfully followed, very little risk of injury to the scalp, and further, that even this risk would disappear with improved apparatus, especially as regards regulation of the vacuum of the tube.

Dr. Margaret Dobson (Bradford) said that she had had three cases of dermatitis of the scalp; in all of them the megalosporon endothrix was present. She suggested that cases of ringworm in which this spore was found might be more prone to X ray dermatitis than others.

Professor Wild had found that private patients objected to the temporary alopecia caused by the X rays. He considered the treatment justifiable where a quick cure was urgent. He thought there was no proof that X rays killed the spores, and therefore parasiticidal remedies should be used after epilation to complete the cure. He had noticed several times that the hair when it grew again was coarser in texture and lacking in brightness, this being apparently due to partial atrophy. He agreed that there was no risk of injury to the brain.

Dr. J. H. Sequeira said that he had treated 1400 cases by the pastille method. He considered risk of injury to the brain was purely imaginary. At the same time he preferred not to treat children under three years of age, where the fontanelles were not properly closed. 267 of his cases had come from institutions where they were under expert examination of both medical officers and school teachers. From these he had had a report that in no single instance was there, after several years' interval, the slightest evidence of any delayed development or other injury to the brain. Sabouraud, Fox, Adamson, and Macleod were unanimous in the same statement. Dr. Sequeira had himself experimented on similar lines with confirmatory results. As to methods of treatment, he gave smaller doses where the hair was fine in texture, considering it more responsive than coarse hair. He thought that for purposes of measurement the tachymeter was useless. He regarded the X ray treatment of ringworm as rapid, efficient, and safe, but made it a rule that in every case the child's parent gave a written guarantee that no legal proceedings would be taken should dermatitis or alopecia result.

Dr. R. W. MacKenna (Liverpool) considered that the evidence given was sufficient for a verdict for the X rays of "not guilty" of causing injury to the brain, and his own experience would accord with such a verdict. At the same time, he agreed with Dr. Sequeira that X rays should not be used for too young a child; personally he only treated children above five years of age. As to alopecia without dermatitis, such a condition often occurred in cases of ringworm where no X ray treatment had been given. With regard to Dr. Dobson's remarks on endothrix, he thought the condition due to lessened vitality in the surrounding cells. He thought it very important that the genuine pastilles should always be used.

Dr. R. E. Howell (Middlesbrough) asked if it were a common experience for the hair to turn grey. This had happened in the first case he treated some years ago.

Dr. S. E. Dore considered that there was no risk to the brain. In confirmation of this opinion he instanced cases of extensive rodent ulcer which had been subjected to large doses over an extended period without the slightest apparent effect on the brain. He mentioned that epilepsy had been treated with X rays, but did not know with what results. If X ray treatment produced any effect at all upon the brain he should think it would be that of temporary stimulation. He agreed with Mr. Cooper that the drowsy and other effects occasionally met with for a day or so after treatment were due to the somewhat alarming apparatus of the so-called "spark specialist." He asked Mr. Cooper what was the area in the brain to which most of the rays converged.

Dr. Sequeira then read a communication from Dr. A. Howard Pirie (London), in which he described a case treated four years ago. Permanent alopecia had resulted, but there was no evidence of any ill-effects on the brain. Dr. Pirie believed in very careful regulation of the current used to ensure uniform dosage.

The President thought that in consideration of the weight of evidence from all quarters they might regard the spectre of brain trouble abolished.

Mr. Cooper, in reply, said that he thought germicidal agents should always be used in hospital cases, not, however, with the object mentioned by Professor Wild, but to prevent re-infection. In his experience that was the greatest trouble which had to be faced, and a germicidal application, such as a mercurial ointment, was necessary in the case of children living under conditions of dirt and squalor. While not maintaining that the X rays directly killed the spores, he found the disease cured by the use of X rays alone, where either the whole scalp was epilated at once, or (as in the case of most private patients) ordinary precautions were taken to prevent re-infection. He did not agree that the new hair was normally atrophic in character or grey in colour. His experience showed it to be slightly darker and stronger, and usually more curly. Deficiency in lustre and pigmentation were due to overdosage, and that was the result aimed at in Noiré's treatment of hypertrichosis. Mr. Cooper mentioned a case of his own treated with a "super-pastille" dose through a filter, with the object of permanently removing the hair. He found that some hairs returned, but were dull, white, and brittle. Probably if he had slightly increased the dose none would have returned. Answering Dr. Dore, as far as he could make out the greatest number of rays converged to about the centre of the corpus callosum. He thought Dr. Sequeira's records of cases from institutions exceedingly valuable, as there was usually such difficulty in keeping in touch with patients years after treatment, though one usually heard if the case went wrong. In conclusion, he thought that after that morning's discussion they might quite relieve their minds of fears as to possible injury to the brain.

Dr. S. W. Allworthy (Belfast) described a case of

Cutaneous Actinomycosis,

showing photographs before and after treatment. The disease apparently originated from chewing raw oatmeal. A tumour was removed and potassium iodide and X rays (30 exposures) were given with good results.

Professor Wild mentioned three cases. He believed in pushing the iodide very far as it was so quickly excreted, 80 per cent. being eliminated in three hours.

The President also described several cases.

Dr. F. Howard Humphris (London) read a paper on

Some Practical Uses of Static Electricity.

He advocated the use of static currents for the relief of pain, particularly in overcoming areas of congestion; instancing sciatica, he said that the pain was relieved by inducing rhythmical tissue contraction or "cellular protoplasmic massage" under which stasis cannot exist. A single administration was gratifying, but treatment should be continued once or twice daily for a week and then gradually discontinued. Where sparking was not well-borne the brush should be given.

Dr. Munro (New York) agreed as to the value of static currents in the relief of stasis; their use was particularly indicated in acute lumbago and prostatitis.

Dr. J. Metcalfe (Bradford) considered high-frequency currents generally more beneficial, but not in nerve cases. He instanced a very bad case of costal neuritis which had been cured by static electricity. He had found these currents useful in Bell's and post-diphtheritic paralyses.

In reply, Dr. Humphris thought that failures in the use of static currents were generally due to lack of knowledge or of a sufficiently powerful machine.

Dr. E. B. Hazleton (Sheffield) in a short paper on

X Rays in Gynæcology,

advocated their use where it was advisable to render a woman sterile and for the reduction of fibroids and of offensive discharges.

Mr. Cooper, while agreeing that men and small female animals were sterilised by exposure to X rays, thought that the ovaries in an adult woman were too well protected for X rays to cause permanent sterility without seriously affecting the superficial structures.

Dr. Sequeira then read a paper on

Idiosyncrasy and X ray Treatment,

communicated by Mr. J. Hall-Edwards (Birmingham) who was unfortunately too unwell to be present. In the author's opinion old cases of "burning," which were put down to idiosyncrasy, were really the result of faulty exposure. He quoted the opinions of most X ray workers who were, almost without exception, of the opinion that idiosyncrasy did not exist. Personally he thought it did exist, but to a very slight extent, and not enough to be dangerous. He mentioned that in many cases pigmentation was due to an idiosyncrasy and not necessarily in proportion to the dose of X rays.

Dr. Humphris thought that many of these so-called cases of idiosyncrasy were due to varying amounts of reverse current passing through the tube, and suggested that they might not occur if the tube was excited by a static machine, the current from which was unidirectional.

Mr. COOPER said that all Sabouraud's work was done with static machines. Pigmentation was frequently due to a drug which the patient was taking, and he mentioned cases of deep pigmentation when the patient was given arsenic (as in leukæmia).

Dr. SEQUEIRA confirmed Mr. Cooper's observation on arsenic and described the case of a student at the London Hospital who received a dose of X rays and subsequently took some arsenic, with the result that several days later deeply pigmented spots appeared.

The work of the section closed with a vote of thanks to the President.

HÆMATOLOGY AND VACCINE THERAPY.

THURSDAY, JULY 29TH.

President, Sir ALMROTH WRIGHT (London).

Professor CALMETTE (Lille) opened a discussion upon the

Early Diagnosis of Tuberculosis for the Effective Treatment of that Disease.

He stated that his own researches in conjunction with those of Bartel, Orth, and Rabinovitch had established (1) that tuberculosis remains localised for a longer or shorter period in the lymphatic glands in connexion with the organ first infected; (2) that the rapidity and intensity of the infection depend on the virulence of the infecting organism; (3) that when the bacilli are neither numerous nor virulent then they may be destroyed in these glands, or the infection may be arrested by calcification of the glands; and (4) that serious tuberculous lesions result either from a single infection in bulk or from numerous infections frequently repeated at short intervals. This last reason would account for the spread of the disease in cattle in infected sheds and in men in infected houses. Professor Calmette laid stress on the importance of diagnosing the infection before it had advanced far enough to give definite physical signs. He condemned the subcutaneous injection of tuberculin for the following reasons: (1) there is a general febrile reaction accompanied by local congestion with possibly a dangerous diffusion of bacilli; (2) it is not practicable in febrile patients; and (3) cases of aggravation of the disease might, rightly or wrongly, be attributed to the injection of tuberculin. The local reactions were preferable, and of these the cuti-reaction of von Pirquet had the disadvantage that it gave positive results in healed cases as well as those in which the disease was active, so that 55 per cent. of all adults gave positive results. In children under three years of age, however, only 4 per cent. of apparently healthy children gave the reaction, so that in children under this age it was of value in diagnosis. The ophthalmo-reaction had the advantage of only showing tuberculous lesions actually in evolution. It also showed to some extent the degree of the infection, the reactions in the more recent cases being clearer and more intense. He had found that those cases which showed the greatest reaction had also showed the presence of the largest quantity of antibodies when tested *in vitro* with tuberculin by the Bordet-Gengou reaction. In some extensive and [illegible] was either delayed [illegible] of apparently he[illegible]e of the tuberculous patients 92 per cent. reacted, these figures being taken from an analysis of 20,000 cases. He did not think that the test was of any value in prognosis, for he found that the amount of antibodies to the tuberculin was in no way relative to the gravity of the disease. The test was not dangerous, but precautions must be taken to see that the eye was healthy and that the tuberculin was aseptic and pure. With these precautions he had only had 80 cases out of his 20,000 (or 0·4 per cent.) in which the reaction had been very severe, so that there was less danger in the procedure than in the exposure to X rays or the puncture of a vein. He maintained that there was no hypersusceptibility in [illegible] test were repeated af[illegible] were obtained it was [illegible] Professor Calmette s[illegible]gnosis of tuberculosis thus: 1. By reactions called "reviviscent," which consist in making a conjunctival or other local reaction appear in patients who are carriers of tuberculous lesions or by the injection of tuberculin subcutaneously. 2. By study of the humoral or phagocytic reactions—(*a*) activation of cobra venom by serum or milk of tuberculous subjects; (*b*) deviation of the complement with tuberculin or extract of tubercle bacilli; and (*c*) opsonic index by Wright's method. He considered that by applying these methods periodically in communities such as schools it would be possible to isolate the carriers of bacilli, by which means the chief cause of the aggravation of the disease would be prevented and the patients could then be put in the way of a cure and possibly of an antituberculous immunity.

Professor W. ST. CLAIR SYMMERS (Belfast) said that one of the great features about such meetings was that it enabled them to come in contact with those men with whose writings and works they were familiar. The ophthalmo-reaction for which they were indebted to Professor Calmette had, he thought, fallen rather into disuse in this country owing to certain dangers which had been met with. However, he had no doubt that when the practitioners appreciated the results which had been put before them it would be restored to favour.

Professor E. J. MCWEENEY (Dublin) said that he had tested some cases both by Calmette's and von Pirquet's methods and his results agreed with those of Professor Calmette.

Dr. THOMAS HOUSTON (Belfast) said that he had found the ophthalmo-reaction too sensitive and there was a possibility of making a diagnosis of tubercle on it when really the lesion was of a different nature although the patient might have some slight tuberculous infection. He preferred to use the opsonic method of diagnosis. He mentioned several cases in which there was a definite ophthalmo-reaction, but which the subsequent history showed to have been cases of typhoid fever, although possibly a latent tuberculous focus was present.

Dr. W. H. WILLCOX (London) said that he had found the ophthalmo-reaction very reliable, but in several cases there had been severe conjunctivitis. He preferred the opsonic test, especially when a series of three or four indices were done before and after some massage or exercise.

Dr. A. C. INMAN (London) said that he had tested the opsonic indices of a number of patients who had had Calmette's test done and had found that it acted as an inoculation of tuberculin, and in some cases a considerable negative phase was induced.

Professor WILLIAM OSLER (Oxford) emphasised the fact that a considerable number of the people present in the room would give positive reactions by Calmette's test, although they were in no sense dangerous to the community. He distinguished between open and closed cases of tubercle, the former being a source of infection, but the latter being quite safe, and therefore not to be cut off from free intercourse with the community.

Dr. INMAN next read a paper on

The Value of the Opsonic Index in the Diagnosis and in the Regulation of Treatment of Tuberculosis.

He maintained that the study of the opsonic index, and more especially the study of the phenomena of auto-inoculation, had given them a very much clearer conception of such a complicated disease as pulmonary tuberculosis. Owing to the limited time at his disposal he touched on only four ways in which the opsonic index was of assistance in the study of the disease. I The early diagnosis of tuberculosis. The best method of applying the index for diagnosis was to examine the blood of the patient before and after some disturbance of the focus, by walking or breathing exercises in the case of pulmonary affections, or by massage or the application of a Bier's bandage in the case of localised approachable foci of disease. If fever were present and the patient confined to bed the blood should be examined in relation to the swing of the temperature and an inverse relationship of opsonic curve to temperature would suggest a tuberculous infection. The great advantage of this method of diagnosis over the old tuberculin test, the ophthalmo-reaction, or the cutaneous reaction, was that no tuberculin was introduced into the body. Latent or arrested tuberculosis frequently gave a positive ophthalmo- or cutaneous reaction, whilst the opsonic index only varied if "auto-tuberculin" coming from the diseased focus was affecting the blood. Under the latter circumstance evidence was afforded that the patient required immediate treatment. II. By blood examinations Dr. Inman had been able to distinguish between the following groups of tuberculosis. 1. Cases in which the blood was varying from hour to hour, the patient being kept at rest (spontaneous auto-inoculations occurring). These cases were febrile. 2. Cases in which the opsonic index did not vary so long as the patient was kept at rest, but varied as the result of exercise (auto-inoculations inducible by exercise). Such auto-inoculations might be excessive and were then dangerous, but if not excessive they were harmless or even advantageous. 3. Cases in which the opsonic index did not vary even after the hardest labour. The disease was here probably arrested. III. The opsonic index indicated the rational treatment of tuberculosis so far as they could go to-day. 1. It had shown the importance of absolute rest in the active stages of the disease. 2. It had explained the effect of graduated labour employed as a therapeutic agent in the treatment of phthisis and the action of Bier's passive congestion method for surgical tuberculosis. 3. It had given a satisfactory means of controlling tuberculin inoculations, as well as of selecting suitable cases for the treatment. IV. The opsonic index afforded a valuable guide as to whether the disease was arrested or not. If restoration to previous good health were accompanied by a normal index before and after active or passive movement of the focus of infection, this might be taken as evidence of the arrest of the disease.

Dr. A. BUTLER HARRIS (London) said he was glad that the time had arrived when the profession recognised that the opsonic index was no mere phantasy of Sir Almroth Wright. He himself had found the index of great use both in the diagnosis and in the treatment of tuberculosis. He did not think, however, that although after treatment a patient showed a persistently normal index for a considerable time he was necessarily cured, and related a case to bear out this point.

Mr. S. MAYNARD SMITH (London) read a paper on

The Inoculation Treatment of Tuberculous Arthritis.

He described the results of an investigation which he had carried out from the point of view of a surgeon into cases that had been treated in the inoculation department of St. Mary's Hospital, London, during the past few years. These cases were 72 in number, and of these 34 attended for examination in response to communications. (Printed particulars of these cases were handed to the meeting.) It was shown that, of the 34 cases, only five were treated by inoculation from the time that they first came under observation. Four made such complete recoveries that it could not be determined which had been the diseased limb; the fifth was cured, some deformity and limitation of movement remaining. In 12 cases splinting, rest, or operation, had been carried out for 12 months or less before inoculation. In 11 of these a cure ensued, in seven with complete restoration of function; the twelfth case had improved and was still under treatment. Of the remaining cases two had had only two months' treatment; in two more no improvement had taken place after six and ten months' treatment respectively; nine were cured, with more or less complete restoration of function; and four had improved and remained under treatment. To turn to another point of view, eight had had sinuses, and in every one of these the sinus had healed except in the case of a man who ceased to attend after six months. In one case the sinuses broke down again after two years, but were now rapidly closing again with recommencement of tuberculin treatment. The question of the use of the opsonic index in diagnosis and in deciding when cure was complete was also dealt with, and, lastly, the ways in which surgical treatment should be combined with vaccine therapy.

Dr. D. W. CARMALT-JONES (London) continued the discussion with a paper on

A Review of the Inoculation Treatment of Tuberculosis.

The paper was a critical review of the cases of tuberculosis treated in the department of therapeutic inoculation at St. Mary's Hospital during the last five years under Sir Almroth Wright. The sites of infection, such as glands or skin, were considered separately, and note was taken of circumstances, such as dose, age, or secondary infections, which might influence results. The object was to enable the prospects of success in any given case to be estimated—that is, it was an attempt to establish prognosis. The patients all attended as out-patients, the records had the usual out-patient imperfections, and it should be noted that the patients had had no advantages except inoculation. The numbers of each kind of case treated were as follows: lymphatic glands, 87; ulcer, sinus, and abscess, 50; genito-urinary tract, 34; lupus, 23; lungs and pleura, 10; bone, 8; dactylitis, 7; peritonitis, 5; eye, 3; and larynx, 2. Tuberculous lymphatic glands, the most numerous class, were studied in greater detail. In all the cases the patients had been personally interviewed. The estimates of results in other sites were made from the records only. Lymphatic glands, 87 cases:—In eight inoculation was only an adjunct to removal by operation; no recurrences were recorded. In 79 cases inoculation was the chief method employed; the patients were inoculated subcutaneously with tuberculin (bacillary emulsion) at intervals of ten days; the doses were minimal at the outset, and were not increased till they ceased to have a therapeutic effect. Free fluid was drawn off by a syringe, and sources of irritation, such as carious teeth, received local treatment. Secondary infections were treated with appropriate vaccines. When glands had disappeared altogether, or had been reduced to the size of cherry-stones, they were considered "cured"; when they remained as large as raisins they were called "much better"; when slightly reduced they were called "better," and others were described as "unchanged" or "worse." 27 cases were cured, 22 much better, 18 better, 8 unchanged, and 4 worse. Age was the most important factor in prognosis; the greatest proportion of good results occurred in young children and in young adults from 15 to 25 years of age; the lowest proportion of good results and the highest of bad occurred at about the age of puberty. The minimal dose was 1/20,000th milligramme for children and 1/15,000th for adults, and the maximal was 1/10,000th and 1/4,000th milligramme respectively. Relapse, after attaining to some degree of improvement, had occurred in 11 cases. Ulcer, &c., 50 cases:—10 cured, 20 much better, 9 better, 8 unchanged, 3 unknown. The dose was 1/15,000th to 1/7,000th milligramme for children and 1/15,000th to 1/5,000th milligramme for adults. As before, the best results were obtained in young children and young adults, and the worst in children from 10 to 15 years of age. Secondary infections occurred in more than half the cases. Treatment lasted on the average about a year. Relapse occurred six times. Genito-urinary tract, 34 cases (testis 9, kidney 8, bladder 17):—7 cured, 8 much better, 13 better, 3 no better or worse, 3 unknown; 5 relapses occurred. The dose was 1/25,000th to 1/4,000th milligramme, a small initial dose being important. Treatment generally lasted a year. Secondary infections occurred in half the cases. Lupus, 23 cases:—3 cured, 8 much better, 9 better, 1 unchanged, 2 unknown; there were 5 relapses. Dose, 1/10,000th to 1/2,000th milligramme. Treatment had lasted two years. Secondary infections were common. Phthisis, 10 cases:—4 much better. The following were also much better: bone 5, dactylitis 2, peritonitis 1, and eye 3. General prognosis:—Glands 1 in 3 cured, 5 in 8 much improved. Ulcer 1 in 5 cured, 3 in 5 much improved. Genito-urinary tract, 1 in 5 cured, 3 in 7 much better. Lupus, 1 in 8 cured, 1 in 2 much better. It was submitted that such results obtained among out-patients proved the very high value of inoculation in the treatment of tuberculosis.

Dr. MARCUS S. PATERSON (Frimley) read a paper on

Auto-inoculation in Pulmonary Tuberculosis.

He explained that he used the word "auto-inoculation" to mean the effect of exercise on the blood as shown by the clinical signs. At first when he had prescribed graduated labour for his patients at the Brompton Sanatorium, he did it rather with the view of avoiding the lazy habits so frequently acquired at sanatoriums, but he soon noticed that many patients who did not improve on lighter work obtained marked benefit when put on more laborious tasks. This led him, in conjunction with Dr. Inman, to regard the whole process as one of auto-inoculation, which supposition was borne out by the serum tests carried out by Dr. Inman. This theory, Dr. Paterson said, had brought him from working in the dark to working with open eyes and had fixed a point at which to aim to find out how much useful work a patient could do without rise of temperature and with decrease of sputum. It had also enabled him materially to shorten the stay of the patient in the sanatorium, so that he was now able to treat 50 per cent. more patients at Frimley without the addition of a single bed. Dr. Paterson laid especial emphasis on the means at disposal for controlling excessive auto-inoculation. Such a condition was constantly occurring in febrile patients, so that in such cases the first thing to do was to keep the patients at *absolute* rest. At first, before he and wash themselves, but more recently he had found that even this should not be allowed and the rest should be absolute. Cough should be carefully controlled, as a patient who coughed violently shook the whole bed and was, as regards foot pounds of work, taking fairly vigorous exercise. The indication of excessive auto-inoculation in the graduated labour patients was a temperature of 99° F., *plus a headache*, and such cases were treated with absolute rest and after about a week they were, as a rule, able to return to work. Dr. Paterson showed charts illustrating the effect on the temperature of excessive auto-inoculations and of the various grades of labour from absolute rest to navvy work. He summarised modern sanatorium treatment as follows:—1. Placing patients under ideal hygienic conditions and keeping them at rest. 2. The same *plus* tuberculin inoculations 3. Prevention of excessive auto-inoculation. 4. Inducing auto-inoculation by graduated exercise or work.

FRIDAY, JULY 30TH.

Professor **BORDET** (Brussels) opened a discussion on

The Infections of the Respiratory Tract

with a paper on the Micro-organism of Whooping-cough. He stated that the researches undertaken with Dr. Gengou in 1906 had caused him to [illegible] cough a small cocco-bacillu [illegible] and staining feebly with [illegible] This, he said, is found ir [illegible] in pure culture, in the exudate, [illegible] rom the depths of the bronchi, [illegible] in the characteristic paroxsyms of cough. The first cultures are difficult to obtain because the organism after leaving the body develops rather slowly, the colonies not being readily seen till the third day [illegible] for their cultivation. [illegible] been mixed a large pr [illegible] Isolation is by no m [illegible] besides the specific organism, only a very few contaminating microbes, the commonest of which are the pneumococcus, streptococcus, or the influenza bacillus. The organism of whooping-cough bears a certain morphological analogy to the influenza bacillus, but it is readily distinguished by its cultural characteristics and by the reaction of immune sera. Professor Bordet's organism grows readily in liquid media containing blood or serum if such medium is spread in a thin layer freely exposed to the air. If the cultures are filtered the filtrate does not appear to possess any very evident toxic properties. But by taking the bodies of organisms grown on solid media a poison can be prepared, by employing the method devised by Besredka for obtaining endotoxins, which is very active and produces the essential symptoms of whooping-cough. The poison has a marked power of necrosis. Injected in minimal doses into the subcutan [illegible] necrosis of th [illegible] large areas, [illegible] fatal; the results are the more remarkable since the toxic extracts employed contain only very small amounts of bacterial substance. Further, this suggests that in whooping-cough the long duration of the period of cough is due to necrosis of the cellular lining of the bronchi, and this is supported by the findings of some histologists. The serum of patients who have recovered from the disease shows specific reactions to the organism. Thus, the fixation of the complement which was devised by Bordet and Gengou in 1901, and which has since been applied to many diseases, notably syphilis, is readily demonstrable. This, in addition to the bacteriological findings, furnishes very strong proof that the organism is the real pathogenic agent in whooping-cough.

Dr. J. **FREEMAN** (London) continued the discussion by narrating his experiences with Professor Bordet's whooping-cough organism. He emphasised the difficulty in recognising and isolating the bacillus in the sputum by reason of its slow growth and its resemblance to the influenza bacillus He was convinced that the organism was the etiological factor in whooping-cough as the serum of patients suffering from this disease agglutinates the bacillus sometimes in as much as a 64-fold dilution. The complement deviation method of Bordet-Gengou also gave confirmatory evidence. The fact also that Dr. Bordet had inoculated some children with a vaccine of the organism and had produced a very severe estimations, [illegible] the organism he had met with no success in this direction. He had performed over 10[illegible] ing from whooping-cough, [illegible] of vaccine of the bacill [illegible] Owing to the lack [illegible] he had found it very difficult to [illegible] ly, but with doses varying from [illegible] he had found that there was a distinct advantage in the cases inoculated with vaccine over those inoculated with salt solution, the difference being most marked where the large doses were used. He thought that when the question of dosage had been worked out properly the vaccine would prove very valuable in the treatment of whooping-cough.

Dr. W. H. **WILLCOX** (London) and Dr. W. **PARRY MORGAN** (London) communicated a paper on

The Treatment of Pneumonia by Inoculation.

The paper was based on the treatment by inoculation of 24 cases of acute pneumonia, most of these cases being patients of St. Mary's Hospital, London, under the care of Dr. Willcox. It was emphasised that vaccine treatment was a valuable therapeutic measure, but that it was not intended that it should replace other forms of treatment which should include the usual approved therapeutic measures. The authors did not consider it wise to give any statistics as to the mortality rate of cases treated by vaccine because, although their results had been extremely good, the number of cases was too small for any definite conclusions to be drawn. Three methods of procedure. in the preparation of an autogenous vaccine were described, cultures being made (1) from sputum; (2) from blood; and (3) by aspiration of the pleural cavity or superficial part of the consolidated lung by a small syringe with a fine needle. The choice of the particular method was discussed. As regards treatment it had been found advisable to commence by the administration of 20,000,000 to 50,000,000 of stock pneumococci immediately the patient came under treatment. At the same time steps were taken to prepare an autogenous vaccine. After 24 to 48 hours a second dose might be given, and further doses if necessary. It was considered important that as the crisis neared the dose should be decreased, since the patient became more susceptible to inoculation at this period. The details of the 24 cases investigated and the clinical effects produced in them by vaccine were described. It was found in many instances that there was an immediate fall of temperature, and the dyspnœa and delirium became less. The duration of the disease appeared in some cases to have been shortened, the crisis occurring in six cases before the usual time. Sometimes the fall of temperature was by lysis instead of by crisis; this happened in eight of the cases, a larger proportion than would have been likely without vaccine treatment The most convincing evidence of the benefit derived from vaccine was shown by those cases which ran a protracted course. In these cases after inoculation almost immediately the temperature fell and the symptoms rapidly cleared up. This improvement could have been due to no other cause than the vaccine, since before this was given all the usual methods of treatment had been adopted without avail. In some cases an autogenous vaccine was found to give decidedly better results than a stock pneumococcus vaccine. The authors emphasised the importance of commencing vaccine treatment as early as possible in the course of the disease.

Dr. A. **BUTLER HARRIS** (London) said that he had been using vaccines for pneumonia for the last two years with very beneficial results He had seen a crisis on the first day of the disease 11 hours after inoculation He thought a stock vaccine made from a virulent strain of pneumococcus was quite efficient

Dr. **MORGAN**, in reply, said that he had found differences in the serum reactions of pneumococci of various origins and had even seen one obtained by lung puncture agglutinated by the patient's serum, although a strain isolated from the throat of the same patient was not so agglutinated. In his experience stock vaccines failed entirely in some cases.

Dr. C. H. **BENHAM** (Hove) read a paper on

The Bacteriology and Vaccine Therapy of the Common Cold.

He suggested that during seasonal epidemics of catarrh a considerable number of the ordinary saprophytes of the upper air passages probably became pathogenic. The organisms he had found in the nose were: (1) micrococcus catarrhalis; (2) micrococcus paratetragenus; (3) bacillus septus; and (4) bacillus of Friedlander, and more rarely the pneumococcus and influenza bacillus. He thought the first four were the usual infective agents of the common cold. The micrococcus catarrhalis caused both acute and chronic colds with very irritable cough, some coryza, and pyrexia. The micrococcus paratetragenus (Bezancon and de Jong) was often associated with it and caused similar symptoms. The bacillus septus (Cautley) was seldom a cause of coryza, but it produced mild pharyngitis, with painful throat, nervous depression, and muscular pains. It was a diphtheroid bacillus with cultural reactions differing somewhat from bacillus diphtheriæ and bacillus Hoffmanni. Charts were shown of three cases of acute cold, one of "influenza," and one of chronic cold. In all of these the administration of micrococcus catarrhalis vaccine was followed by a rise in the opsonic index and a marked improvement in the clinical symptoms. Dr. Benham concluded from his work that vaccine therapy was the most efficient way of treating such diseases.

Dr. FREEMAN thought that the pneumococcus and streptococcus ought to be assigned a more important rôle in the production of such diseases, as he had found them of very frequent occurrence.

Dr. BUTLER HARRIS said he had found that the micrococcus catarrhalis, the pneumococcus, and the bacillus septus were the most frequent inhabitants of the nose. He did not think the clinical condition was any indication of the bacteriology. He instanced several cases of acute "sore throat" which were caused by micrococcus catarrhalis and which cleared up within 12 hours of the administration of one dose of vaccine.

The PRESIDENT offered himself as an example of the influence of vaccines on chronic infections of the respiratory tract. Although he had suffered from chronic bronchitis for 30 years, after a few doses of his own pneumococcus the condition entirely cleared. He laid stress on the importance of the influenza bacillus in many of these conditions.

Dr. D. W. CARMALT-JONES (London) followed with a paper on

The Treatment of Bronchial Asthma by a Vaccine.

He suggested that the spasmodic dyspnœa which was such a distressing symptom in many cases of chronic bronchitis was due to a specific bacterial toxin, the result of a definite infection, and was amenable to treatment by a corresponding vaccine. He isolated from a case of bronchitis with spasmodic dyspnœa a short Gram-negative bacillus with rounded ends, non-motile, growing readily on ordinary media, and not fermenting any of the common sugars. The patient after three doses of from 20,000,000 to 30,000,000 of a vaccine prepared from this bacillus lost all her dyspnœa. There was a slight recurrence three months later which disappeared with a renewed administration of vaccine. The speaker had used the same vaccine in over 50 similar cases since, but the results were difficult to gauge, as the degrees of disability at the outset were very variable. The condition was markedly intermittent and the symptoms were largely subjective, so that results depended on the patients' statements. In some cases the results of treatment were remarkable, and out of 52 cases treated 13 lost all their symptoms, only four completely failed, the remainder receiving varying degrees of benefit either in the frequency or severity of the attacks. Attempts at serum diagnosis had failed, but the fact that the vaccine had been so effective was, in Dr. Carmalt-Jones's opinion, strong presumptive evidence that the dyspnœic attacks were due to a specific organism.

The proceedings of the section were closed with a paper by Dr. ALEXANDER FLEMING (London) on

The Bacteriology and Vaccine Therapy of Acne Vulgaris.

The author emphasised the importance of the acne bacillus in the etiology of this condition, a subject which he had elsewhere discussed at some length.[1] The medium which he had found best for the growth of the bacillus was ordinary nutrient agar to which had been added 1 to 5 per cent. of oleic acid, but even on this it was necessary to plant out the pus very thickly to obtain a growth. In the treatment of acne he had obtained exceedingly good results with a vaccine of the bacillus, either alone or in combination with staphylococcus vaccine in those cases where there was a mixed infection.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

WEDNESDAY, JULY 28TH.

President, Dr. STCLAIR THOMSON (London).

The PRESIDENT expressed his pleasure at the honour which the Council had conferred upon him by electing him as President. He regretted the untimely death of Dr. Robert Allen, who had so well aided him in drawing up their programme, which had been carefully considered, and had been arranged with special reference to questions affecting the profession generally. In tinnitus they had a trouble that was widespread, and in the discussion upon diphtheria they would have the advantage of an expert clinician, a skilled bacteriologist, and an able guide in state medicine; while in the treatment of laryngeal stenosis they were to have the pleasure of hearing a prominent British surgeon, together with an eminent American authority; and they would also hear the views of a laryngological expert from Brussels. After a few remarks upon the pronunciation of the word tinnitus the President introduced

Dr. THOMAS BARR (Glasgow), who then read a paper on

The Treatment of Tinnitus Aurium from a Non-operative Standpoint.

Dr. Barr referred to the difficulty in finding its cause, which might be in the conducting or receptive apparatus, and which might be simple as in cerumen, or complicated as when due to oto-sclerosis, to intralabyrinthine or to intracranial involvement, or to some general affection, as kidney or heart disease, diabetes or gout, in all of which treatment appropriate to the case should be given; for example, neurasthenia might be either cause or effect, but in either case prolonged rest, tonics, and change of air were indicated. He believed that oto-sclerosis, which was often associated with anæmia, required general rather than local treatment. Digitalis was useful in the pulsating form, whereas alcohol generally aggravated it. Bromides, hypnotics, and sedatives were referred to and the indications for their use mentioned. The action of fibrolysin in the absorption of fibrous adhesions was touched upon. The sometimes doubtful results of quinine and salicylates were pointed out, and the indications for, and objections to, their use discussed. Bromides were probably useful at bedtime and sometimes gave great relief. Paraldehyde also was at times beneficial. Potassium iodide was useful in the forms associated with vertigo even with no evidences of a specific diathesis. He thought that pilocarpine was indicated in those cases showing Ménière's symptoms. With reference to climatic conditions, he thought that bracing inland and upland air was good, without, however, over-exercise of the body. He considered that external applications of stimulating remedies, such as cantharides or liniment of mustard, to the mastoid process occasionally mitigated the noises. He dealt with massage of the tympanum with a vibratory frequency of from a few hundred to 2000 a minute, which he had found sometimes of benefit; but he laid stress particularly upon the good results obtained by the application of a tuning-fork to the affected ear, the pitch of the note of the fork being of an opposite character to that of the subjective noise (*tonbehandlung*). Electrical treatment he thought of little value and might be actually injurious. It was important to establish natural breathing and to see that the nasopharyngeal space was healthy. It should be remembered that tinnitus was occasionally due to dental decay.

Mr. R. LAKE (London), who followed, divided treatment into operative procedures remote from the ear and auditory apparatus and those dealing with any part of the auditory tract. Amongst the former were intranasal operations, lumbar puncture, and ligature of the carotid. The useful intranasal procedures for reflex tinnitus were removal of the posterior ends of the inferior turbinates and of spurs of the septum, which extended to the outer nasal wall. These conditions, though rare, required treatment if tinnitus were present with good hearing. Obstruction or irritation of the pharyngeal end of the Eustachian tube might require treatment. He gave Babinski's results of lumbar puncture, which showed 33 per cent. relieved, and thought these were rather due to an indirect effect upon blood pressure, as the endo- and peri-lymph spaces of the labyrinth were not in direct communication with the sub-arachnoid space; and he found that the tinnitus resulting from arterio-sclerosis was often modified or removed by remedies which lowered arterial tension. He referred to the early days when the tympanic membrane was trephined and other minor operations were performed which time and experience had modified or left behind. He considered that better measures were now adopted than division of the tensor tympani or even than section of the posterior fold. Of all these procedures he would prefer multi-section of the posterior fold. He did not think much of removal of one or more ossicles, but such might perhaps be tried before a major operation which destroyed the hearing altogether, if there were some hearing power to be preserved. He next dealt with the removal of the stapes, which operation was associated with the name of Jack. The results, however, were not quite what were hoped for. He reviewed methods of opening the labyrinth and of trephining the cochlea, which he thought better done with a radical mastoid operation to enable a better view to be obtained and which did not necessarily destroy the hearing' Ligature of the carotid he thought indefensible. He concluded his remarks with a description of what he considered the logical operation—i.e , ablation of the cochlea after a preliminary radical mastoid operation—giving descriptive cases. He strongly objected to division of the auditory nerve, which was very dangerous and had a high death-rate.

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[1] THE LANCET, April 10th, 1909, p. 1035.

Dr. J. A. KNOWLES RENSHAW (Manchester) thought that tinnitus was far most frequently due to chronic middle-ear non-suppurative catarrh, or to the suppurative form, and in both cases he believed that this symptom became more and more severe. Its treatment had firstly to deal with all the accessory passages, as of the nose and Eustachian tube. It had been suggested that tinnitus was due to increased tension in the labyrinth caused by the indrawing of the foot-plate of the stapes, or to some obstruction of the lymph circulation by some contracting interstitial tissue, and he had therefore tried hypodermic injection of thiosiamine. He had used a 5 per cent. aqueous solution twice a week, increasing the dose from six to 35 minims. Latterly he had used an aqueous solution of 10 per cent. thiosiamine and 20 per cent. of glycerine in the same manner, and he had also tried fibrolysin. There had been a marked improvement in every case, but it was too soon to claim any permanency; still, he thought that it should be tried before operating upon the middle-ear or labyrinth for this trouble. In reply to a question by the PRESIDENT, Mr. RENSHAW stated that he had treated about 20 cases of chronic middle-ear disease, 12 of which were suppurating, and that all were relieved during the injections.

Dr. ANDREW WYLIE (London) considered that an attempt should be made to relieve tinnitus even though it could not be cured, and he had found that from one-twentieth to one-twelfth of a grain of calomel given every second night was of service. He had also tried passing hot air into the tympanum through the Eustachian catheter, and found it useful. The air was heated by an electric lamp and driven through the catheter by means of a foot pump—a contrivance of his own which he demonstrated.

Dr. G. W. HILL (London) considered that the surgical treatment had been fairly summed up by Mr. Lake. He himself had never opened the labyrinth for tinnitus because in two of his cases the cochlea had been exfoliated, and yet the tinnitus had remained. Of course, the tinnitus might be central, and then the absence of the cochlea would not improve matters, and division of the auditory nerve was useless as it really extended to the centre for auditory impressions.

Dr. J. [illegible] of the va [illegible] he did r [illegible] much to do with tinnitus beyond, perhaps, keeping up the tension of the membrane. He thought that syphilis was a frequent cause. He referred to the great nervous depression sometimes resulting and gave an instance in which it had led to self-destruction. With reference to treatment he used injections of chloroform and air alternately. He had removed the ossicles but had had no good results, but as surgical treatment had now so much advanced there was hope on these lines in the future He considered that there was great danger of facial paralysis in division of the auditory nerve.

Dr. R. H. WOODS (Dublin) laid great stress upon the fact that it was mere assumption to speak of a permanent increase of tension in the labyrinth caused by pressure inwards of the foot-plate of the stapes. This idea was based upon an experiment by Politzer, which he could not agree with. It could only occur for a short space of time because of the free communications of the labyrinth with the parts around.

Dr. A. LOGAN TURNER (Edinburgh) thought that it had not been proved that fibrolysin injected into the blood had any selective action upon fibrous tissue in the middle-ear, and that the good results mentioned by Dr. Renshaw might have been secondary to its action elsewhere in the body, as, for example, in cases of chronic gastric ulcer. Its introduction into the tympanum might possibly have a beneficial result.

Dr. BRYSON DELAVAN (New York) thought that the question was one of the greatest importance and congratulated the Association upon its choice of this subject for discussion.

A telegram of apology for non-attendance was here announced from Dr. H. Smurthwaite, a Vice-President.

The PRESIDENT stated that he had only recently written to Dr. Lermoyez's assistant about the hot-air treatment for nasal catarrh, and that he had received a reply that it was not thought so much of as formerly, and that it was considered that the results of its use were due rather to suggestion.

Dr. BARR replied, and thought that operation on the labyrinth generally gave more relief to the vertigo than to the tinnitus. It was interesting to hear Dr. Turner's suggestion *re* the indirect action of fibrolysin.

Mr. LAKE, in his reply, emphasised the importance of Dr. Woods's objection to the assumption of any permanent increase in intra-labyrinth pressure. With reference to ablation of the cochlea, the modiolus must be removed, for the bony cochlea might, as in Dr. Hill's case, be exfoliated and yet leave some nervous elements behind.

Dr. HUGH E. JONES (Liverpool) read a paper on

Preliminary Observations on the Association of Slight Abnormalities of the Auricle with Certain Forms of Deafness,

in which he referred to the smallness or absence of the lobule and other slight defects which had been considered to be associated with certain vicious or criminal tendencies. He thought that these defects were generally associated with disease which was not the result of acute inflammation, but rather was the result of imperfect development of the palate, the naso-pharynx, the Eustachian tube, or the tympanum, and he considered the defects could be explained upon these lines, where other more evident causes could be excluded. If so, this was important from the point of view of treatment and prognosis; for example, such patients had erroneously been considered as suffering from adenoids and operated upon for this condition, without, of course, any beneficial result.

The paper was discussed by Mr. G. JACKSON, Dr. DAN MCKENZIE, and Mr. LAKE, who complimented the speaker upon his statistics.

Mr. GEORGE JACKSON (Plymouth) then read a paper on

The Etiology of Auditory Meatal Exostoses,

dividing the cases into those that entirely blocked the meatus, those which did sc [illegible] caused a slight narrowing [illegible] remarks by a specimen o [illegible] caused complete occlusion and in which the patient's bone conduction was perfect, but whose aerial conduction power was one-twentieth of the normal. After removal the hearing improved for air conduction to one-half of the normal. He thought that if such growths did not materially interfere with discharge or with aerial conduction they might be neglected. Such conditions were not common, for out of 3000 cases of ear disease in the report of the Devon and Cornwall Hospital only 11 had been recorded, and of these only two required operation. He discussed their etiology, but could not arrive at any definite conclusion. They certainly generally occurred in connexion with exposure to sea-water, and he gave the results of some e [illegible] support of [illegible] quoted ma [illegible] media. Th [illegible] generally sessile.

In the discussion following Dr. H. JONES referred to a case that was bilateral, and upon which he had operated, in which there was no improvement of hearing, in which it was very difficult to find the membrane on the left side, and in which it was absent on the right.

Dr. DAN MCKENZIE (London) read a paper of considerable interest, and one showing a large amount of clinical investigation, on

The Clinical Value of the Labyrinthine Nystagmus Tests.

He included in his results many different diseases of the ear, in nearly all of which some labyrinthine trouble was suspected. The method consisted in estimating the time necessary to produce nystagmus by the application of certain fixed temperatures to the external surface of the membrana tympani. Water at two temperatures was used (so-called hot and cold tests), the relative temperatures being about 42° C. and from 22° to 24° C. The tension upon the drum was practically constant, being produced by a fixed head of water. The factors taken into account were the time necessary to produce nystagmus, the particular character of the eye movements produced, and any associated phenomena. He found that in health nystagmus appeared in from 20 to 40 seconds; in hyper-excitable states of the vestibular system it occurred in from five to 15 seconds; while in cases of diminished excitability the time was from 50 to 120 seconds, and when the labyrinth was not responsive no reaction followed. Vertigo was generally first experienced, its severity usually varying inversely to the induction period. In all cases both ears were compared before coming to any decision, and any nystagmus produced by testing one ear was allowed to pass away before making any tests upon the other ear. He found the reactions in cases of simple chronic middle-ear catarrh to be those of health, while in oto-sclerosis the results were widely different, and the reaction bore no relationship to the degree of deafness. Occupation deafness was referred to, but the numbers examined were too few to enable any conclusive results to be established. Three cases of hysterical deafness showed that the vestibular sense was impaired in proportion to the severity of the deafness. All the cases of neurasthenic deafness gave the reaction of hyper-excitability of the nervous mechanism, the induction period being very short. This contrasted markedly with cases of perceptive deafness. He found that the cochlear function was not always destroyed *pari passu* with the vestibular, and this was so in syphilis of the labyrinth. These tests he considered important in the large group of suppurative conditions, as they should show the extent to which the disease had progressed, and he found that in chronic uncomplicated suppuration of the middle ear, and in cases of acute mastoiditis, the reactions were normal or only slightly exaggerated, but in cases of circumscribed labyrinthitis the vestibular sense was impaired, whilst impairment was still further increased after the simple radical mastoid operation, possibly either because the resulting scar tissue in the neighbourhood interfered with the transmission of heat, or that the inflammation had destroyed the special sense-organ in the ampullæ. He gave many clinical results and from these inferred that in many conditions of ear disease the reactions were not sufficiently uniform to be of pathognomonic value, yet when taken into consideration along with other symptoms, as for example the hearing and the rotation tests, they were of assistance.

Dr. H S. BARWELL (London), in the discussion following, hoped that the investigations would be continued, especially upon normal individuals.

Dr. BARR thought that cold water applied to the membrana tympani was generally injurious.

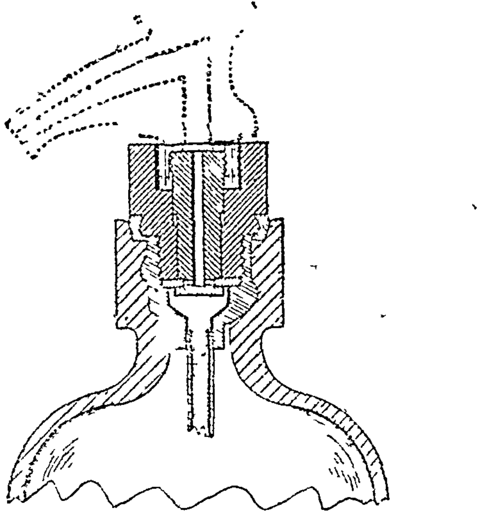
Dr. MCKENZIE, in replying, stated that the time of application of the cold water was too short to have any harmful effects and that no sickness or faintness had followed.

THE ANNUAL EXHIBITION.

(Continued from p. 400.)

IV.—SANITARY APPLIANCES.

THOUGH comparatively few in number, the exhibits under this head were interesting in variety, and comprised filters, mineral water apparatus, and disinfectants. A number of various forms of filters was shown on the stall of Messrs. Slack and Brownlow of Abbey Hey, Gorton, near Manchester; but attention was directed in particular to the Brownlow germ filter, constructed of porous porcelain, and to a modification of it for hospital use which provides a supply of hot or cold sterile water. Messrs. H. and T. Kirby and Co. of 14, Newman-street, London, W., exhibited their "ideal valve" feeder which we have already described as a useful hygienic appliance for the nursery. The valve is of solid glass and indiarubber collars and washers are properly dispensed with. An attractive series of sanitary polishes and accessories formed the feature of the exhibit of Messrs. Ronuk, Limited, of 86, York-road, Lambeth, London, S.E. Here were specimens of model floors in various woods polished by the Ronuk improved sanitary methods and also samples of liquid and concentrated Ronuk for hospital use. The Jeyes' Sanitary Compounds Company, Limited, of 64, Cannon-street, London, E.C., had a large stall literally packed with their disinfectant preparations, notable amongst which were those containing the non-toxic germicide "cyllin." The Hygienic Syphon Company Limited, of 20, Bucklersbury, London, E.C., exhibited their hygienic syphon which secures the acme of cleanliness as far as the storage and preservation of aerated water in a syphon are concerned. The accompanying diagram will help to explain its construction.



The Hygienic Syphon.

The porcelain spout (shown in dotted lines) is detachable and when the syphon is not in use a porcelain stopper may take its place (as, for example, in transit). By simply pressing the spout when in position a rubber valve below is pushed beyond a series of perforations in the delivery tube through which the water then passes. Amongst the advantages of the syphon are (1) simplicity of parts by which the most scrupulous cleanliness may be secured apart altogether from the impossibility of metallic contamination; (2) an easily cleaned reservoir; and (3) the detachable spout serves also as a key, so that the water can be reserved for private use. The use of the word "hygienic" in the name of this syphon is completely warranted. The Sanitas Company, Limited, of Limehouse, London, E., showed a number of disinfectant fluids, powders, and soaps, besides some apparatus for the convenient use of sulphur dioxide, formaldehyde, &c., for practical disinfection. The exhibit included a vaporiser to be used with "bactox" in certain respiratory diseases. At the stall of Messrs. B. Kuhn and Co., of 16, Rood-lane, London, E.C., the applications of chinosol for antiseptic and disinfectant deodorising purposes found illustration in a series of interesting preparations.

V.—MINERAL WATERS, BEVERAGES, ETC.

Non-alcoholic beverages were a decided feature of the exhibition and it may be noted that Belfast enjoys a reputation for the purity and excellence of the mineral waters manufactured there. It has been said, indeed, that the cause of temperance in the city has been materially helped by the attractive quality of its "dry" ginger ale which happens to be a speciality of the place. The artesian well water-supply is remarkably pure and particularly suitable for the preparation of aerated beverages. Every conceivable kind of aerated water was to be found in the stall of

Messrs. Grattan and Co., Limited, of Belfast, who in spite of the purity of the water in its natural state go further and sterilise it previous to carbonating. Amongst special beverages *may be mentioned their "crown soda"* ginger ale (*sans sucre*), lithia, potash, quinine, and piperazine waters. Messrs. Ingram and Royle, of East Paul's Wharf, 26, Upper Thames-street, London, E.C., had a most complete representation of natural mineral waters, including Contrexéville, Æsculap, Vichy (Célestins, Grande-Grille, and Hôpital sources), whilst specimens also of the dry natural Carlsbad sprudel-salt were shown. The corporation of Bath drew the attention of the visitors to the merits of the historic thermal springs of that city by a series of photographs and medical reports and other literature. It is satisfactory to learn that British people are beginning to realise that in the thermal waters of Bath they possess a medical asset unrivalled by any spa abroad, including [illegible] highly extolled waters abroad. The environment of Buxton is notoriously healthy, and the authorities may be congratulated on giving considerable attention to the social requirements of a bath station, as well as to advanced balneotherapeutic methods. Messrs. Findlater and Co., London Bridge Corner, London, S.E., showed a number of medicinal waters of foreign origin, including the aperient sulphated waters of Carabana, Spain, the alkaline waters of Ems, the arsenical waters of Levico, the iron waters of Schwalbach, and the alkaline waters of Wildungen. The representatives of the Apollinaris Company of 4, Stratford-place, Oxford-street, London, W., explained the advantages of Apollinaris water in large stoneware bottles. The water keeps cool in these bottles, and competes with other mineral waters in regard to price. As is well known, the degree of alkalinity of Apollinaris water is considerably higher than other mineral waters, and hence its value in catarrhal affections. The exhibit included the natural aperient water "apenta," which is now well known as a convenient and effective bitter purgative. The attractions of the Royal Leamington Spa were illustrated in a series of photographs, guides, and publications, and it was made evident that the authorities there are leaving no stone unturned to bring this health resort into line with modern requirements. A well-known effective yet mild bitter purgative saline water is Friedrichshall, specimens of which were shown by Messrs. C. Oppel and Co., of 10 and 12, Milton-street, London, E.C. Grape juice appears to be coming into favour as a beverage mixed with plain or aerated water, while some have employed *it for the* "grape cure." *Messrs.* Schweppes, Limited, of 49, Pall Mall, London, S W., exhibited their "Vindevie," which was recently reported upon in our columns. It is a sterilised grape juice with pleasant slightly acid flavour. There were also exhibited samples of "proset," dry and sweet, a non-alcoholic beverage with delicate fruity flavour, and dry ginger ale, which is said to help the "drink patient" out of his habit. Another excellent grape juice was exhibited by the Grape Juice Company, Limited, of 7, Great Tower-street, London, E.C. Cider was well represented by Messrs W. Gaymer and Son, of Attleborough, Norfolk, who exhibited amongst other specimens some "dry" varieties, sound and of excellent flavour, and free from acidity. Bendle's meat port (Bendle, Limited, 41, Seething-lane, London, E C.) was the only wine of the kind in the exhibition. As our analysis has shown, it is sharply distinguished from other wines by the fact that it contains actual nutritive materials in the shape of proteins.

VI.—PUBLICATIONS.

Stalls containing books of reference on medical subjects formed a relief from the spaces occupied with foods, drugs, surgical appliances, &c. Amongst the well-known publishers exhibiting recent additions to medical literature were Messrs. John Wright and Sons, Limited, of Bristol; the British Medical Association as publishers of the *British Medical Journal*, 429, Strand, London; Messrs. Henry Frowde and Hodder and Stoughton, Oxford; Messrs. D. Appleton and Co., 25, Bedford-street, Covent Garden, [illegible] and the Cambridge University Press; Mr. H. K. Lewis, of 136, Gower-street, London; Messrs. Rebman, Limited, of 129, [illegible] W.C.; W. B. Saunders Comp[illegible] Covent Garden, London, W.C. [illegible] of 5, Henrietta-street, Cover[illegible]

VII.—MISCELLANEOUS.

There were few exhibits this year coming under this section. In it may be mentioned a motor car by Chambers Motors, Limited, of Cuba-street Works, Belfast, designed specially for the use of medical men and described as being able to stand hard work, and economical as regards petrol consumption and running capacity; the special non-sagging bed mattresses of Messrs. John and Joseph Taunton, Limited, of Belgrave Works, Sherbourne-road, Balsall Heath, Birmingham; and the Aertex cellular clothing of the Cellular Clothing Company, of 72 and 73, Fore-street, London, E.C. In the last exhibit an interesting fabric was shown in the shape of a specially dyed red Aertex material for use in the tropics which prevents the passage of the actinic rays of the sun to the body but allows the red and orange to pass.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-eighth annual meeting of this association was held, as has already been announced in THE LANCET, on July 22nd and 23rd at the West Riding Asylum, Wakefield, and at Leeds, under the Presidency of Professor W. BEVAN-LEWIS.

The morning session of the first day was devoted to the [illegible]

The retiring President, Dr. C. A. Mercier, and his retiring coadjutors on the council having been cordially thanked, Professor Bevan-Lewis took the chair and read his address. After brief acknowledgments for the honour conferred upon him in his elevation to the presidential chair he announced as the subject of his address, The Biological Factors in Heredity. *Whilst paying a tribute of admiration* to the elaborate researches of Sir Francis Galton and Karl Pearson, and admitting the great utility of statistical studies in heredity when confined to their proper sphere, he maintained that the biological method was supremely that proper to the physician to study, and the only true method which would unravel the many problems of genetics. After dealing minutely with [illegible] he devoted special attenti[illegible] results which had been [illegible] against the accuracy [illegible] that such apparent inconsistencies were the result of misinterpretation on the part of the opponents of Mendel's teachings, that most objections had been triumphantly met, whilst others were still awaiting more elaborate inquiry on the ground of their complexity, or the very recent date when Mendelian *methods were* first applied by Bateson, de Vries, Tschermack, and Correns. With a brief reference to mutation, as taught by de Vries, and to its incompatibility with the doctrine of minute continuous variations regarded by Darwin as the groundwork upon which evolution proceeded, he indicated the foreshadowing of this doctrine of the importance of discontinuous variation by Huxley in 1861. In dealing with the fallacies of interpretation whereby the biometrician had failed to reconcile Mendelian with statistical results, he dealt with the phenomena of segregation, its failure from definitely ascertained [illegible] especially in connexion with parthenogenetic [illegible] and the probable struggle betwixt the sex[illegible] selection-mating"—as it has [illegible] fallacy were shown to [illegible] stituted "unit [illegible] coupling of such units, the inheritance of coat-colour in rabbits and mice, as worked out by Bateson, Miss Durham, and others. The more intricate combinations of unit characters and their transmission were illustrated by descriptive charts. Dominance as a biological phenomenon was then referred to as contrasted with prepotency in the Darwinian sense, and it was shown to be a non-essential factor in establishing the accuracy of Mendel's law; whilst lantern slides were shown illustrative of partial and complete dominance. Lastly, purity of type was alluded to, and the application of Mendelian formulæ to disease, so far as already worked out. Illustrations of the transmission of the predisposing factors in disease, in accordance with Mendelian facts in human heritage, were discussed, the results of recent research being shortly detailed. Mendelian methods of interpretation bearing upon nervous and mental diseases were dealt with, and the statement made that "towards such as challenge the validity of Mendel's methods and would substitute statistical inquiry in their place as the only method for unravelling the mysteries of heredity, there can be no compromise."

The President distributed the prizes gained during the year as follows: Dr. Henry Devine, Long Grove Asylum, Epsom, the Gaskell prize, consisting of £45 and a gold medal, at the same time congratulating him on his recent success in the University of London; Dr. G. H. Grills, Chester Asylum, £15 and a silver medal; Dr. Colin McDowall, Hatton Asylum, Warwick, the bronze medal and £10

On the proposition of Dr. Mercier, seconded by Dr. G. H. Savage, a hearty vote of thanks was passed to Professor Bevan-Lewis for his address, Sir James Crichton-Browne adding an eloquent tribute to the President's work in the domain of the study of insanity.

On the evening of the first day the members and their guests dined together at the Queen's Hotel, Leeds. The President was in the chair, and among those supporting him were the Bishop of Wakefield. The toast of the evening, "The Medico-Psychological Association," was proposed by the President in a speech full of most interesting reminiscences, which concluded by an extremely hopeful outlook concerning the future of psychiatry. Other toasts were "The Leeds University," "The President," and "The Visitors," in addition, of course, to the usual loyal toasts.

The proceedings on the second day were opened with a paper by Dr. Helen Boyle entitled, "An Account of an Attempt at the Early Treatment of Mental and Nervous Cases." The essayist said that during her two and a half years as a County County medical officer in East London she had been appalled at the sight of mental patients being manufactured in the rough. People who were poor, unhappy, neglected, maltreated were turned into lunatics through sheer stress. All that could be done for a poor mother of ten children after childbirth was to give her a bottle of medicine and tell her to go home and rest. No hospital would take her, as she had no organic disease, and no asylum would take her, as she was not certifiable. Much good work was done in the limits imposed by small funds by a hospital which took nervous cases early—cases which, but for timely treatment, would probably have been merged into the insane. Dr. Boyle detailed the methods of treatment, and was able to point to extremely good results. The institution admitted only women, and patients from every kind of profession had been admitted.—The paper was discussed by the President, Dr. Rayner, and Dr. Oswald.

Dr. J. R. Gilmour read a paper on the Mental Symptoms in Exophthalmic Goitre and their Treatment. He detailed with much minuteness the various symptoms, the outstanding features of which were irascibility, irritability, suspicion, and restlessness. In one case improvement suddenly set in after the administration of quinine had been commenced, and this was furthered by the administration of milk from thyroidless goats, and the latter treatment was helpful in nearly all the cases dealt with. Rest, taken in the open air, was of very great importance in Dr. Gilmour's view. A combination of bromide of patassium and belladonna was of great benefit. In cases of "tidal Graves's disease" he advocated partial thyroidectomy.—The paper was discussed by the President, Dr. G. Scott Williamson, Dr. Bower, Dr. Orr, Dr. L. D. H. Baugh, and Dr. Helen Boyle, and Dr. Gilmour replied.

Dr. Scott Williamson read a paper on the Cerebro-spinal Fluid in General Paralysis and the Nervous Lues, in which he dealt with the chemical characters of the cerebro-spinal fluid and their diagnostic importance, confirmed by a review of 78 examinations, with special reference to the syphilitic reactions of Wassermann, Porges-Meier, and others.—The contribution was discussed by the President, Dr. R. G. Rows, Dr. McRae, Dr. Gilmour, and Miss Winifred Muirhead (Glasgow), most of whom were also engaged in bacteriological work bearing on various mental states.

Dr. Scott Williamson's other paper on the Bacillus Paralyticans, a contribution which criticised the work of Ford Robertson and others on this micrococcus, was the occasion of a keen debate, in which Dr. W. Ford Robertson, Miss Muirhead, Dr. McRae, and Dr. W. H. B. Stoddart took part.—Dr. Williamson replied at some length on the points raised, but admitted that the subject was one of considerable difficulty, and there was not time for a full and adequate reply on the many points raised.

The next paper was one, prepared at short notice, by Dr. Ford Robertson, on the Experimental Production of General Paralysis. The contribution was illustrated by some striking photographs of rabbits in which various definite symptoms had been produced.—Dr. Orr said that the evidence adduced by Dr. Ford Robertson of neuro-toxicity was very striking and the work came very much into line with some work which Dr. Rows and he were doing. He reminded members that three years ago Dr. Rows and himself published the results of toxic infection of the lymph paths leading up to the spinal cord, and the method they adopted was one which eliminated the fallacy of injury to the cord—namely, putting the toxin into a small celluloid capsule and placing that under the sciatic nerve of a dog, leaving it there for a time until it was clear that the toxin had escaped from the capsule and entered the lymph paths. But to make the research complete it was necessary to trace the histological evidence of that upward passage of toxins right along the nerve and the posterior ganglion root to the cord itself. They were able to say that the bacillus of Robertson and McRae was a highly toxic body, but pending further work, upon which they were engaged, it was best to suspend ultimate judgment. Changes were produced by it in the smaller vessels, with proliferation of the adventitia. Also, the nuclei lining the endothelial spaces in all directions were proliferated, especially the posterior nerve. The most striking point in regard to the cord was the dilatation of the central canal. The ependymal cells were proliferated several deep and the neuroglial cells about the ependyma showed marked proliferation, while the nerve cells showed nucleation.

Mr. L. O. Fuller read a very interesting paper on Alcoholism, Crime, and Insanity. He pointed out that children of the poor were often in conditions in which they were given every chance of acquiring the drink habit, and among their parents tubercle and syphilis were common. He regarded post-natal environment as a very great cause of degeneracy. Though the child might not be very intellectual he was a good imitator, and copied his parents' habits with great facility. One case admitted under his care recently was that of a girl, aged 22 years, who commenced to get drunk at the age of 11 years, and both her father and mother were heavy drinkers. At the age of 14 years she adopted immoral habits, and during the last eight years she had spent her time in drink, jail, and prostitution. By their eighteenth year some girls had had one or two illegitimate children. The most scientific way of dealing with degeneracy was one which aimed at removing the causes rather than alleviating the symptoms, a great desideratum being much greater elasticity in the educational system. If a person showed relapse he should have a period of instructive detention, with a view to prevent drink habits being firmly formed; this should combine medical instruction with disciplinary methods. He strongly objected to a predetermined sentence: to the youngster it was often a hardening process, it threw him into the ranks of the unemployed and often the unemployable, and finally he became very hostile. He was not usually a lunatic and he was not wholly responsible, but he was often capable of improvement by instruction and could be taught a handicraft. A short prison instruction could not give benefit to a person who was mentally backward. He advocated the establishment of receiving houses, into which such cases as he was describing could be admitted in the first instance. He strongly objected to the fixed term of three years; there were many cases in regard to which such a sentence was unnecessary, and expressed his belief that there was much necessity for an alteration of our present system.—Dr. MERCIER, in discussing the subject, said that there were points in it with which he would agree, and others with which he did not agree; particularly he agreed in deprecating the stupidity of the fixed three years sentence. These people were sent to a reformatory, where it was felt that their condition was at any rate as much a disease as a vice, and being a disease, they were sentenced to a fixed term, in which he supposed it was anticipated their disease would be cured, and that the cure would take neither more nor less than that time. That led to what he did not hesitate to call abominations. Under the instruction of the Home Office the term "not exceeding three years" had become in practice a term of not less than three years. He had seen cases receive all the benefit they were likely to derive from reformatory treatment in six months, yet they were compelled to stay there another two and a half years, in which time they had mostly lost whatever ability to work which had remained in them. One man told him that he had forgotten the very names of the tools he used to work with when he went in. Again, when they went out there was no supervision over them, and in many cases they quickly got into the hands of the police again. And, as if to make such a sequel more likely, they were on discharge handed a sum of money which had been put by for them during their detention. Inebriates were on quite a different footing from lunatics; the former were much less certain in the matter of conduct. He did not agree that abstinence, or partial abstinence, from alcoholic drinks argued the possession of a superior power of self-control. Some people, having taken a certain, sometimes a small, quantity of alcohol turned against it and had no desire for more; others did not turn against it until they had been drinking for two or three days.—Dr. HEARDER said that in his locality the magistrates would not send a case to the reformatory unless it showed mental symptoms, but the sentence was not fixed—it ranged from one to three years. Moreover, the *cases could be discharged on licence, so that it could be* seen how they behaved themselves. And in their case the money which was put by for the patient was not handed to him, but to responsible relatives or other persons always at a distance, so that the patient had at least to get [illegible] more drink.— [illegible]d [illegible]ty that in 70 per cent. of inebriates there was a weakened power of control compared with that possessed by the majority of the community. He believed that the inebriate was a different kind of person from the drunkard.—Mr. FULLER having replied, the session closed.

PREVENTABLE BLINDNESS.

THE Committee on "Preventable Blindness," which was appointed at the International Conference on the Blind, held at Manchester in July, 1908, has recently issued the following report:—

The subject of the prevention of the disease which so frequently causes blindness in newly-born infants is one that for many years has engaged the attention of all whose work has brought them into contact with the blind. At every conference that has been held during recent years relative to the welfare of the blind, whether at home or abroad, attention has been called to the urgency for taking satisfactory measures for the checking of this disastrous cause of blindness.

The medical libraries contain a host of papers and books which have treated of this disease, and of the blindness consequent thereon. Recent English literature has been summarised in the report of the British Medical Association Committee (*British Medical Journal*, May 8th, 1909), to which reference will be made further. The gist of these papers is to the effect: 1. That more than one-third of the blindness found in British blind schools is due to this one cause—infants born with good eyes are blinded by the disease within a few days of their birth. 2. The risk of blindness is entirely preventable by prompt and efficient treatment.

To this end it is now almost universally agreed, by medical men and laymen cognisant with the subject, the disease known as the "Ophthalmia of the New-born" should be scheduled as compulsorily notifiable. And it is believed that by such action this appalling source of misery and helplessness would be checked. In spite, however, of these urgent recommendations, no action has been taken by the British public health authorities, *nor have these* authorities, so far, availed themselves of their permissive powers to make the disease compulsorily notifiable.

At the International Conference on the Blind, held in Manchester in July, 1908, it was held that no sufficient steps had been taken to give publicity to the urgency of the matter. A representative committee was therefore appointed to consider the subject fully, and to make such recommenda- [illegible]

(hon. surgeon, Leeds United Institution for the Blind and Deaf and Dumb), and Mr. N. Bishop Harman (oculist to the London County Council Blind Schools). These gentlemen were expected to advise on matters relating to the north and south of England respectively. During the sittings of this committee, another committee, instituted by the British Medical Association, has had this same matter under review. The two committees have acted upon quite independent lines, and the fact that they have arrived at similar conclusions and make virtually the same recommendations adds greatly to the weight of their recommendations.

The following are the recommendations of the committee appointed by the International Conference:—

1. That in the opinion of this committee the adoption by the public health authorities of the Early Notification of Births Act is urgent.

2. That in the opinion of this committee the disease known as the "Ophthalmia of the New-born" should be added to the list of diseases compulsorily notifiable under the powers of the Infectious Diseases (Notification) Act of 1889.

3. *That in the opinion of this committee: (a) More* definite teaching should be given to midwives on the seriousness of eye disease in children; and (*b*) they suggest that the Central Midwives' Board should issue more stringent instructions on the danger of "whites" in lying-in women.

With a view to obtaining more exact knowledge of the incidence of "blindness" in subsequent census returns, the committee recommend that the Registrar-General should be requested to define and classify "blindness" in his schedules in some such way as the following:—

1. Stone blind—i.e., the individual has no power to see the movement of fingers before the eyes.

2. Partially blind, i.e., in the case of—i. *Children.* Those who have not sufficient sight (even with the aid of glasses) to be taught in an ordinary school. ii. *Adults.* Those who have not sufficient sight (even with the aid of glasses) to earn a living by ordinary means.

In conclusion, the committee desire to emphasise the fact that the question is at the present juncture, and is likely to be in the future, of much greater importance than in the past. *For the introduction and extension of the operation of* the Employers' Liability Act is seriously affecting, and is likely to still more seriously affect, the earning powers of adult workers with defective vision.

(Signed) HENRY J. WILSON (Chairman).
N. BISHOP HARMAN.
CHAS. M. COLLINGWOOD (Hon. Sec.).
ROBERT N. HARTLEY.
EDITH WRIGHT.
THEO. WARNER.
WALTER LITTLEWOOD.
J. M. RITCHIE.
June, 1909. S. CLARE HILL.

NEW HOSPITAL FOR TORRINGTON (DEVON).—On August 4th L[illegible] G[illegible] [illegible]ew cottage hospital [illegible] a site given by th[illegible] [illegible]nd that of other local benefactors the building has been erected as a memorial. *The hospital contains surgery, consulting* room, operating theatre, matron's rooms, &c., and will pro- [illegible] eight patients. The cost of the [illegible] as all this amount has been sub- [illegible] of debt.

THE LANCET.

LONDON: SATURDAY, AUGUST 14, 1909.

Preventable Blindness.

The fact that from 30 to 40 per cent. of persons in blind institutions have lost their sight from ophthalmia neonatorum or purulent conjunctivitis of infancy is indeed lamentable, and now that renewed attention is being devoted to this preventable disease we may hope that some adequate measures will soon be adopted to remove the evil. Some years ago the matter received careful consideration by the Ophthalmological Society of the United Kingdom and certain resolutions were adopted and placed before the authorities. The comparatively small financial outlay involved in carrying out these suggestions—a matter of some £7000 odd—was held to be prohibitive, in spite of the obvious fact that the cost of education and support of those blinded by the disease immeasurably surpasses this amount. In 1907 an energetic effort was made to induce the British Medical Association to take the matter in hand. The need for this action had been conspicuously shown by Mr. Sydney Stephenson's book on "Ophthalmia Neonatorum," which gained the Association's Middlemore prize and which presented an admirable survey of what had been done in the past and of the large amount that yet remained to do in attacking the disease. As a result of the attention then directed to it a representative committee of the Association was formed, and after prolonged and exhaustive investigations a report was drawn up, and at the recent meeting at Belfast the report was discussed by the combined Obstetrical and Gynæcological and Ophthalmological Sections. It will be seen from our *résumé* of the proceedings (p. 459) that the principle of notification of the disease was approved, though the attendant difficulties in practice were fully recognised. Exception was taken, and we think rightly, to the suggestions as to treatment. In our opinion the disease is too serious and its consequences are too grave for the treatment, even in the matter of prophylaxis, to be left in the hands of unqualified people, and if it is relegated to the medical practitioner he ought to be allowed to adopt freely the methods which appear best to him.

Just before the Belfast meeting the report of a committee on preventable blindness, which was appointed at the International Conference of the Blind, held in Manchester in July, 1908, was issued (see p. 477). The similarity of the recommendations to those made by the committee of the British Medical Association shows the unanimity of opinion existing as to the best means of dealing with the difficulty. Notification is again advanced as the central feature of the plan of campaign. That it is productive of good results is shown by the example of Manchester, where a voluntary system of notification has resulted in a diminution of cases by 40 per cent. From another part of the country comes a report showing the awakening of public conscience to the continuance o an evil which is acknowledged to be preventable and mus be considered consequently a scandal to our civilisation In Staffordshire an influential meeting of mayors, chairmen of urban district councils, town clerks, and medical officer of health was recently held to discuss the prevention o ophthalmia neonatorum. It was presided over by the Earl o Harrowby, who in the course of his speech gave a concrete example of the financial loss due to those disabled by blindness early in life. The cost of educating a blind child up to the age of 18 years without teaching him a trade is £500, whereas the cost of educating a full-sighted boy for the nine years he was at school was only about £30. A simple calculation shows that £15,980 are wasted in Staffordshire alone in educating children blind through neglect. At this meeting notification of the disease was also advocated.

There can be no doubt, in our opinion, that notification is the first step which should be universally adopted. Another preliminary is that of extending the knowledge of the extreme gravity of the disease amongst those likely to come in contact with it. To this end the Central Midwives Board has drawn up a leaflet of instruction which will be distributed to midwives.[1] These are steps quite in the right direction; but it must be recognised that they are preliminaries only, and useless unless some scheme is devised for dealing with the cases by qualified practitioners with the greatest promptitude as soon as they come under observation. And here again comes in the pecuniary question of ways and means for the preservation of the national health—a question which is coming so much to the fore in regard to the medical treatment of school children. It is incumbent upon the medical profession to bring all its influence to bear upon the State for the prevention of such terrible disabilities as ophthalmia neonatorum inflicts upon thousands of helpless infants, but it is the duty of the State to provide that the practitioners who act as the trustees of the children's eyesight shall be properly remunerated for fulfilling the active responsibilities which that trust will entail.

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Preventive Medicine and the Lower Animals.

Those who can recall the battles which raged around the "Origin of Species" and the "Descent of Man" will not need to be reminded that the human being does not readily relinquish his supremacy or share with others that which he believes to be his natural prerogative. And even when man felt constrained by the force of evidence to admit his biological associations he did not easily accept the inference that he might have to share with the lower animals the heritage of certain diseases. His own maladies were clinically so unlike those of the lower animals that he was inclined to use this fact as an argument against rather than in favour of the doctrine of evolution But time has altered our attitude and epidemiologists are beginning now to wonder whether the clue to much that is still unexplained in pathology may not be and the laws of parasitology. It was only when we turned our gaze from the human subject to the insecta that the mysteries of malaria and yellow fever faded away; and similarly when we examined the life history of the goat the difficulties as regards Malta fever largely disappeared, and by studying plague in the rat and in the flea much in the malady as it attacks human beings became explicable. Thus it comes about that the annual report of Mr. STEWART STOCKMAN, chief veterinary officer of the Board of Agriculture and Fisheries, has an interest for the epidemiologist —an interest which should increase year by year as the interdependence of human and animal diseases becomes more fully appreciated.

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[1] The Lancet, August 7th, p 409.

Although the foot and mouth disease of cattle does not in these days give rise to much recognised disturbance in man, it is well known that the milk from cows suffering from this malady may produce, especially in children, an illness attended with aphthous stomatitis, swelling of the tongue, and fœtor of the breath, or, on some occasions, severe tonsillitis. It is therefore reassuring to learn from Mr. STOCKMAN'S report of the prompt measures which were taken in an outbreak of this disease in Scotland—the first for 15 years. The initial outbreak occurred in two cowsheds, and all the cattle therein, together with those on immediately adjoining premises which were still free from the disease, were promptly slaughtered. Of the 111 animals on the actually infected premises only two cows and one calf had escaped infection up to the time of slaughter. But the infectivity of this disease seems a remarkable one and, notwithstanding the wholesale slaughter, the malady was transferred to other premises about three-quarters of a mile distant, which the owner had taken for the purpose of carrying on his business, and it was impossible to explain how the disease had been carried since none of the attendants had suffered from the malady nor had any manure been transported from the old to the new premises. But as an illustration of the disease-carrying capacity of manure it may be mentioned that the malady in question was transferred to another set of premises by soakage of drainage from a manure heap through the intervening wall. These three outbreaks involved the slaughter of 148 bovine animals on infected premises and 96 on premises dangerously situated Th[illegible] have arisen from a small [illegible] infected country, and Mr. STOCKMAN points out that the history of the epidemic renders it necessary to revise current views as to retention of virulence on the part of the virus of foot and mouth disease, as, contrary to what was formerly believed, it seems that in cool weather virulence inside a bale of hay may be retained for from three to four months.

The facts in the story of glanders serve, like the study of exclusively human diseases—if there are any—to show how the prevalence of any given malady may be immediately increased by searching for unrecognised cases. It was found in the case of glanders that the more frequent application of the mallein test in horses in contact with a declared case materially increased the number of horses per outbreak as compared with previous years. Apparently the chief difficulty in the control of glanders what animals are to be regarded as having been in contact with infection. This, in Mr. STOCKMAN'S view, is a much more serious matter than the fact that the mallein test does not reveal the disease during the incubation period, and that therefore a second test in invaded stables becomes necessary so as to detect these cases. There were in 1908 as many as 2433 horses found to be infected with glanders, and we have been wondering whether cases amongst human beings are sought out as thoroughly as amongst cattle Apparently cases in men are more numerous than is commonly believed. In connexion with anthrax Mr. STOCKMAN narrates a case of the introduction of this disease through the medium of bone manure which had been applied to a field of grass which was afterwards kept free from animals for nearly a year, during which a crop of hay was removed from it. Nine cows were then introduced for grazing purposes and three died from anthrax—a most instructive story.

The expense of transporting European pedigree cattle to the Transvaal, where they have either to be kept in stables or incur the imminent risk of contracting Texas fever by being pastured with indigenous cattle, has led to the Veterinary Department of the Board of Agriculture, in collaboration with similar departments of the Transvaal and East African Protectorate, undertaking inoculation experiments against this disease, the animals after inoculation being sent to the Colonies and pastured on farms infected with the disease in question. It is thought that if these experiments prove successful a considerable stimulus will be given to the export trade of pedigree cattle In connexion with this work Mr. STOCKMAN has, in collaboration with SIR JOHN MCFADYEAN, carried out some investigations into red-water fever in England, and he has been able to show that the blood of animals suffering or recovering from English red-water fever will infect other susceptible cattle after an incubation period of from six to ten days, the characteristic parasite, Piroplasma bigeminum, being found in the blood corpuscles, in some cases there being red colouration of the urine. *But in connexion with this* latter symptom Mr. STOCKMAN points out that although red urine was the circumstance which gave the disease one of its names, red-water fever, this manifestation is only apparent in perhaps the minority of cases, and consequently it is preferable to call the disease piroplasmosis. Mr STOCKMAN has also made some instructive investigations as to the part played in England by ticks in relation to English red-water fever, and although the Ixodes ricinus and the Hæmaphysalis punctata are both, he thinks, capable of carrying the parasites which cause the disease, he has *only so far obtained experimental* proof relative to the latter. These ticks, after engorgement upon infected and recovered animals, were kept in the laboratory until they produced progeny, and the larvæ were then allowed to suck healthy animals. Larvæ from mothers which had sucked infected animals yielded negative results, as also did nymphæ which had sucked infected animals as larvæ. But adults which had sucked as nymphæ animals with red-water fever gave the disease to the next bovine host. There can be no doubt therefore, as Mr. STOCKMAN states, that the red-water fever of England is a piroplasmosis which is inoculable and which spreads from animal to animal by ticks. It has also been found that the seasonal prevalence of red-water fever in this country corresponds with that of the greatest prevalence of adult ticks. Mr. STOCKMAN finally furnishes some useful advice as to the prevention of red-water fever, whether by inoculation, by the reduction of the number of ticks by dipping, by keeping cattle off the pastures for a time, or by stocking the pastures with sheep, which animals are not susceptible to red-water fever, but which attract the ticks. This work on the part of the Veterinary Department of the Board of Agriculture and Fisheries is of much value, and we shall look forward to an extension of it.

The Report of the Royal Commission on Whisky and other Potable Spirits.

WHATEVER may be the opinion of the liquor trade and of the public of the findings contained in the final report of the Royal Commission on Whisky and other Potable Spirits there can be no question of the thoroughness with which the Commissioners have attacked the numerous difficult points which such an inquiry was bound to bring before them. And yet as the outcome of their long deliberations the position is left much where it was. The present report, in fact, goes very little further than the conclusions arrived at by the Select Committee on British and Foreign Spirits which was appointed by the House of Commons in 1890, when almost every one of the questions considered by the present Commission was submitted to the Committee and reported upon by it. Lord JAMES of HEREFORD and his distinguished colleagues indeed express their conviction of the correctness of the conclusions of this Committee. There will therefore be some disappointment experienced by those who had hoped to find in the new report suggestions regarding fresh legislation upon the subject, or the inauguration perhaps of a new system of control by which the quality of the supply of potable spirits could be improved. There are practically no recommendations of the kind in the Blue-book, although throughout the report the Commissioners generally express concurrence with the findings of the 1890 Committee, a concurrence which gives, perhaps, a species of strength to their views.

In the opinion of the Commissioners it is not desirable, either in the interests of the trade or of the public, to enforce certain standards, to insist upon exact definitions or upon the restriction of particular materials in regard to the manufacture of potable spirits, and all propositions towards these ends, around which so much discussion has taken place, fall to the ground. The Commissioners refuse to believe that there is any importance attached to the question whether whisky is pot or patent still, and the value of whisky in the treatment of disease depends, they hold, essentially on the ethylic alcohol. Accordingly, they are unable to recommend that the use of the word "whisky" should be restricted to spirit manufactured by the pot-still process, and their conclusion is that whisky may be defined as "a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt." Scotch whisky is defined as whisky distilled in Scotland, and Irish whisky as whisky distilled in Ireland. Broad as this definition is, it obviously, and as we think very properly, excludes the use of such materials as potatoes, beet, and molasses. In regard to brandy, the Commissioners practically adopt the definition of the British Pharmacopœia, their conclusion being that the term "brandy" is applicable to a potable spirit manufactured from fermented grape-juice and from no other materials. The compounded spirit, however, known as British brandy should in their opinion be still entitled to the name. This last is a concession to trading interests, which throughout have been considered. It is further concluded that the application of the term "brandy" in this country cannot be controlled by the nature of the apparatus or process used in the distillation of the spirit. Here, again, the claims of the pot and patent still are put upon a common level, and more than once the Commissioners dismiss any suggestion that pot-still spirit is superior for any purpose to patent-still spirit. It may be doubted whether the view will meet with general acceptance that the alcohol and the alcohol alone accounts for all the results of prescribing a potable spirit. The popular view again that potable spirits are more wholesome for being matured by age will, we imagine, die hard, in spite of the Commissioners' statement that they were unable to obtain actual proof that such was the case. Practical experience, which for some definite reason decides at one time in favour of the use of brandy and at another in favour of whisky, is surely based on something more tangible than mere flavour. Those who use spirituous drinks are aware that whisky, brandy, and rum are different in their physiological effects. There is much here that is as yet beyond the ken of chemistry or physiology, but it is rash to conclude, we think, that all the effects of a potable spirit are due simply to alcohol.

The Commissioners by no means profess, however, that the question has reached finality as a result of their very careful inquiry, for they suggest, we are glad to see, the introduction of a statutory provision by which a magistrate can receive the assistance of two assessors, being persons of practical or scientific knowledge of the matters involved, to sit with and advise him in cases where the nature of a potable spirit is under consideration. It may also be desirable, they think, to form under authority a panel from which such assessors may be selected. Lastly, they refer to the question of forming a committee of skilled persons under Governmental authority who might assist in mitigating some of the difficulties of the subject, by advising on technical questions which affect both the administration of the Sale of Food and Drugs Acts by local authorities and the practice of public analysts. In our opinion this is one of the most important matters to which the Commissioners have drawn attention. Repeatedly in these columns we have urged the appointment of a court of reference composed of scientific authorities who would be competent to deal with the technical questions, of which the examination of whisky and other potable spirits is an example, and which so constantly arise in the administration of our laws against adulteration.

Annotations.

"Ne quid nimis."

THE RATIONAL PUERPERIUM.

As long ago as the year 1773 White of Manchester urged that women should be allowed to get up early after their confinements. In 1899 Kustner revived this idea and recommended that puerperal women should be encouraged to get out of bed during the first few days of the puerperium. In a paper recently read before the Edinburgh Obstetrical Society[1] Dr. F. W. N. Haultain, from an experience of 100 cases, put forward a plea for what he termed the rational treatment of the puerperium. The mode of management which he recommended was that the woman be encouraged to sit up in bed to meals on the second day, and subsequently as soon as she felt inclined that she be allowed to leave her bed and sit up for an hour. On the third and fourth day two hours were to be spent out of bed morning and evening, and the fifth day was to be practically spent out of bed altogether with the exception of a few hours' rest in the afternoon. Under this treatment his patients left the hospital on the tenth day. Of 100 cases treated in this way the morbidity (i.e., of which a temperature over 100° F. or a pulse-rate of over 90 for 12 consecutive hours were taken as the signs) was represented by three. Examination on the day of leaving the hospital showed the pelvic organs to be normal except in two cases where a slight retroversion of the uterus was found. In 48 of the cases examined six weeks or later involution was good, and the position of the uterus was normal except in the two cases mentioned. Dr. Haultain maintains that labour is not a disease and that the puerperium cannot be considered a convalescence. He believes that involution is influenced mainly by the circulation, and exercise of the abdominal muscles will improve their tone, accelerate the abdominal circulation, and among other advantages diminish constipation. The position of the patient can have but little influence on the occurrence of septic inflammation or upon involution, and the erect posture is less likely to produce displacements of the uterus than the dorsal position. In the same way he thinks that early rising will tend rather to diminish than to increase the chances of the occurrence of phlebitis and embolism. The blood of a puerperal woman is highly fibrinous, and to prevent coagulation the circulation should be stimulated, and this is most readily done by muscular exertion. Most of the speakers who took part in the discussion at Edinburgh were not entirely convinced by the arguments brought forward. The danger of backward displacements was thought to be considerably greater than the figures quoted in the paper showed, and Dr. J. W. Ballantyne pointed out that among the Javanese, who were compelled by custom to rise for a short time during the first day and move about the house, prolapse was exceedingly common and embolism frequent. Although it may be true, as Dr. Haultain maintains, that the normal puerperium is not a convalescence from disease, yet it may well be regarded as a convalescence from the troubles and often marked trials of pregnancy. Further than this, in a large majority of women the rest in bed, even if it be only for ten days, has a most beneficial effect upon their general health. That it is possible without any serious risk of injury to make a woman get up on the first few days following her confinement is quite true, but that it is expedient is very doubtful. We grant that fortunate results may be met with in a small series of cases, such as those recorded by Dr. Haultain, but the adoption of this method of treatment on the large scale would, we feel sure, lead to a number [illegible] It is interesting to have a [illegible] fact that women can get up within a short time of their confinements and suffer no harm, as indeed a great many among the poor do at the present time, but we do not think that it has been proved that such a procedure is desirable for the majority.

THE AMELIORATION OF LIFE FOR CHILDREN.

THAT the systematic medical inspection of children in elementary schools would lead to the necessity of providing for the treatment of the large number who would be found to be physically defective was a conclusion that could be foreseen from the time when this great social measure was first mooted. Our readers are aware of the practical difficulties that have arisen in devising a scheme for the systematic treatment of many thousands of diseased children which shall not leave any child uncared for, shall neither press too hardly upon poor parents nor yet undermine their proper sense of responsibility, and shall be equitable to the ratepayers and, at the same time, to the medical practitioners who will be responsible for the children's treatment. One thing is quite certain. Whatever be the amount of existing disease which has to be grappled with, the future watchword of this national movement must be "Prevention" rather than "Cure," not only because cure is in a great many cases impossible of attainment, but also because in the long run prevention is the cheaper way of rearing a healthy generation. And the business of prevention cannot be confined to the school, for no amount of sanitary supervision of class-rooms and playgrounds, or of hygienic instruction imparted to the children can be of any avail while dirt, squalor, and penury are the conditions which dominate their home life. What is wanted is the general amelioration of life for large numbers of children to whom we are imparting "education" which they are totally unable to assimilate, and which in too many instances affords a cruel commentary upon the facts of existence as they know them. In our last issue we published a paper read at the recent Leeds Health Congress by Dr. James R. Kaye, medical officer to the West Riding county council, to which he gave the suggestive title, "Ameliorative Measures Indicated by School Medical Inspection," and in which he put forward a plan by which the general amelioration of life in its broadest sense for the children of the masses, both by improvement of home conditions and by prevention of disease, may be made something more than a pious phrase on the lips of drawing-room reformers. After very properly remarking that the primary object of inspecting school children was not to compile statistical and anthropological figures, but to put the children in the way of becoming healthy and useful men and women, Dr. Kaye laid down a scheme by which the proper help may be given to each individual child. It consists in the formation of a "Care of Children Committee" in each district, having the district education subcommittee as the nucleus, to which will be added special workers each entrusted with the personal supervision of a certain number of children, and directly responsible to the committee for their care and progress. The chief sphere of activity of these missionaries of health would be in the children's own homes. They would do their best to see that the parents took proper advantage of the expert advice given by the medical officers who had inspected the defective children, or who had given advice as to treatment. They would use their influence to make the homes brighter and cleaner—a matter in which, to achieve success, zeal and righteous indignation must assuredly be tempered with tact and sympathy; and they would bring to the notice of local charitable persons or agencies cases worthy of assistance, and in general concentrate their special efforts on the amelioration of such conditions as are known to be favourable to the development of disease. The principle of voluntary coöperation with specially appointed committees for the safeguard of the public health is not quite new, for it will be remembered that the Majority Report of the recent Poor-law Commission recommended the formation of medical assistance committees which were to help the proposed "Public Assistance Authorities" and to include amongst their numbers voluntary workers in the cause of the public health. If Dr. Kaye's scheme is to take effect on any wide scale—and we shall be glad to hear that it is being given a trial outside Yorkshire—we are inclined to think that the special workers will have to be paid. Some doubt may be felt as to whether they should all actually have seats on the care committees, of which they will be in some sense the servants, but they should certainly have representation on those bodies. But this is an administrative matter which we need not now discuss, for we have fulfilled our purpose in commending Dr. Kaye's scheme of amelioration to the careful study of all who are interested in the final solution of the problem of the children's health.

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[1] THE LANCET, July 31st, 1909, p. 297.

THE IBERIAN TYPE AND DISEASE.

MEDICAL geography is a science in embryo, but already good work has been done in the direction of estimating the incidence of disease in particular districts. It would be of interest if in future medical topographers would note whether disease runs in families of a particular type in the districts under examination. Is cancer, for instance, a disease particularly of "the old black breed," the Iberian or brunettist peasantry who descend, in all probability, from a pre-Celtic race and are everywhere to be found side by side with fair-haired and fair-complexioned Saxons? In certain towns, such as Exeter in the far south-west and Thurso in the far north, fair and dark types are constantly found in sharp contrast, for fair and dark have lived immemorially juxtaposed in both places. In Exeter there was a Cornish or Celtic quarter of the city well on into the Middle Ages. Here, then, the inquiry is easily conducted, but there are more rural districts where fair and dark continue in well-defined separate existence. We have in view now the narrow belt of cultivated land, some three miles wide, which lies between the virgin heaths of the New Forest and the shore of Christchurch Bay. Here philology suggests that certain families belong to the Jutic or Saxon invasion of the early ages, while certain place names point to Celtic or pre-Celtic patches of population having lingered on in secluded corners, as they are known to have lingered in the Fens and elsewhere. A prevailing clan at Highcliffe is Frampton. (*Query*, "fram," in Scandinavian, "forward" or a "ship"? Whence we get "Fram-tun," "forward-settlement," or "ship-settlement.") A few miles to the westward Hengistbury Head marks the site of a very early Saxon or Jutic "burg," whence settlers may have pushed forth along the neighbouring shores. In all this belt of land to the south of the forest the local type is often remarkably blonde, in the case of the children certainly. At Bransgore, which juts with its woods across the Forest boundary to the north, the Iberian types are found. Now "Bran" is a Celtic name, and one is tempted to believe that Brans-"gore" means the wedge of land where Bran, an early Briton, left descendants whose type remains. The Iberian, or very dark type, is common all over Hampshire. In some remote villages, as at Bosham in the neighbouring county, one might fancy oneself in the West of Ireland, to judge by the appearance of the dark-haired and blue- or grey-eyed inhabitants. In his interesting natural history study of Hampshire and the New Forest, Mr. Hudson has much to say of the Forest Iberians. In many manifestly English peasant families, he avers, he has found one raven-tressed ivory-complexioned child, usually of intelligence superior to that of its brothers and sisters, whom he holds to be a cast-back to a prehistoric type. On the other hand, Gilbert White, a Hampshire man, thought that all Whites were Gytes, descendants of Gytas or Jutes. The point of these remarks, however, is not meant to be philological. What the medical profession would like to know, and what members of that profession might be interested to ascertain, is how far do certain diseases attack one or other racial type by preference.

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS AT BUDAPEST: THE ABSTENTION OF ROUMANIA.

THE preliminary arrangements of the forthcoming International Medical Congress, which will take place at Budapest between August 29th and Sept. 4th, have now been completed; and the preparation of the programme of the various fêtes and official functions which will take place in connexion with it is at present engaging the attention of the committee, which is working hard to make this Congress at least as memorable as its predecessors. The accommodation of members of the Congress has been made a matter of especial care, and a number of rooms in hotels and lodging-houses have been reserved by the Central Travelling Ticket Office (V. Vigadó-tér 1, Budapest) on behalf of those who intend to be present but have not yet enrolled themselves as members. At the same time, it will be well for all such people to write and signify their intention of attending, enclosing their subscriptions, in order that they may profit by the reduced fares and other advantages offered to members of the Congress by the various railway and steamship companies serving Budapest. Those desirous of obtaining further information should communicate with the Secretary-General of the Congress at VIII Esterházy-utca, 7, Budapest, until August 19th, and at VIII. Museum-körút, 6/8, Budapest, after that date. In England we have for many years succeeded fairly well in keeping professional questions out of the arena of party strife in which rival politicians and sectarians contend. This has been fortunate for all concerned, both for the patient and the practitioner, because medical science is from its nature something apart from the various artificial distinctions which society has created for itself. In ague or syphilis the Whig and the Tory take the same kind of physic; in certain diseases of nerve or muscle a leading light in Calvinism resorts to galvanism just as a latitudinarian would do. It therefore seems to us truly unfortunate that a kind of schism due to political causes has arisen in connexion with the approaching International Congress of Medicine in Budapest. The nature of the trouble is disclosed in a circular which has been forwarded to us by "Le Comité National Roumain pour la Participation au XVI-ème Congrès International de Medecine." The circular is signed by 27 professors in Jassy and Bucharest, the list being headed by Dr. Thomas Jonnesco, dean of the Faculty of Medicine in Bucharest. It states that the medical men of Roumania have decided not to take part in the International Congress of Medicine to be held in Budapest because a Roumanian lady married to a Hungarian Member of Parliament had been sentenced to imprisonment by a Hungarian court of law, her alleged offence being that she had told some Roumanian children that it was for them a right and a duty to cultivate their national language. *Everybody will admit* that the lady was right and that the Hungarian judge or magistrate was wrong; the sentence, moreover, was not carried into effect owing to the medical men, and inducing them to reconsider their decision.

MUNIFICENT GIFT FOR CANCER RESEARCH.

THE late Mr. Harry Barnato bequeathed a sum of money, amounting to a quarter of a million sterling, for the establishment of a charity in memory of his brother, Mr. Barney Barnato, and of his nephew, Mr. Woolf Joel, both of whom died before him. It was the desire of the testator that the institution when founded should be devoted mainly to research work. We therefore cordially welcome the announcement that the trustees, Mr. S. B. Joel, Mr. J. B. Joel, and Mr. S. G. Asher, have decided upon applying the bequest to the building and endowment of an institution for the study and treatment of cancer. We heartily congratulate these gentlemen in their choice, and we believe that no better employment of the munificent gift could have been adopted. The new establishment will be administered, except as regards its finance, in connexion with the Middlesex Hospital. Those connected with that hospital have had a vast experience in dealing with patients suffering from cancer, and a most painstaking research by competent observers is being carried on within the special "cancer wing" connected with the hospital. Fortunately a site was available adjoining the hospital and this has been duly acquired. It is proposed to erect a building containing 50 beds and a research laboratory, but no definite plans have yet been made. An increase of facilities for investigation into the nature of, and treatment of, cancer, under the supervision of the authorities of a great hospital constitutes a grand addition to our scientific and humane resources, and the trustees of the Barnato bequest may feel assured that the fullest and best use will be made of the increased opportunities afforded for research work, while the unfortunate victims of the disease will largely benefit, inasmuch as many more beds will be available for their assistance. It is also right to mention that the Middlesex Hospital authorities will not be relieved in any way from their present responsibilities in connexion with the main hospital or with the special cancer wing. The Barnato fund will be entirely devoted to the building and endowment of the new buildings. In this way it is hoped and believed that medical science will receive most valuable assistance, for it is only by constant and prolonged investigations that advance can be made in the prevention and treatment of a disease the exact nature of which so far baffles inquiry.

A PERMANENT APPENDICULO-VESICAL FISTULA.

IN the *Journal of the American Medical Association* of April 3rd Dr. R. Cadwallader reported a very rare sequel of appendicitis. A girl, aged eight years, suffered from nocturnal incontinence of urine which would not yield to the usual remedies. At the age of 12 it was noticed that mucus and pus were passed in the urine with pain. These symptoms were more marked when the bowels were loose. At times she suffered also from colicky pain, which never confined her to bed or suggested appendicitis. At the age of 17 years fæcal matter was observed in the urine from time to time. This matter usually took the form of seeds of fruit, husks of grain, mucus, and brown débris, and was not always of a fæcal odour. At times gas of a decidedly fæcal odour was passed with the urine. The patient thought that at times she passed urine by the bowel. She came under Dr. Cadwallader's care at the age of 20 years. He tried to establish beyond doubt the existence of a vesico-intestinal fistula. Inflation of the bladder and of the intestines was performed without success. Iron given by the mouth could not be found in the urine nor did methylene given by the mouth escape by the rectum. For days nothing appeared in the urine, and then blackberry seeds, pearl barley, and striped muscle would appear according to the diet. The cystoscope showed no inflammation of the bladder, but on the fundus was a dark patch, at one spot on the border of which was some inflammatory tissue. Laparotomy was performed. A large adhesion was found between the ileum and the fundus of the bladder and was separated without revealing any communication. Under this the tip of the appendix was found adherent to the bladder at about the peritoneal reflexion over the uterus in the middle line. The appendix was about 7 centimetres long. A cuff containing peritoneum and muscular coat was turned back from either end and the middle part was cut away. The stumps were disinfected, the cuffs were ligatured over the stumps, and the abdomen was closed. Recovery was uneventful. It is remarkable that there was no history of a definite attack of appendicitis. Rupture of an appendicular abscess into the bladder is common, but only two cases appear to have been recorded in which this gave rise to a permanent fistula. Dr. W. W. Keen has reported a case in which "the appendix became soldered to the bladder, producing a urinary-fæcal fistula" This patient was a man who, at the age of 24 years, passed in the urine seeds, pus, and intestinal débris. The fistula existed for some years before operation.

TYPEWRITING AND METABOLISM.

THE *Journal of Biological Chemistry* for June contains an interesting study of the metabolism of man during the work of typewriting, by Mr. Thorne M. Carpenter and Mr. Francis G. Benedict. In the past 30 years there has been a remarkable development in the use of mechanical machines for writing, and the typewriter of the present day has very largely displaced handwriting, particularly in commercial correspondence. The major movements involved in typewriting are much greater than those involved in writing with a pen, and this suggested that there might be a corresponding increase of metabolism as a result of using a typewriter as compared with handwriting, even on the basis of the elimination of energy per 100 words. The typewriter shows a marked increase in speed over handwriting and entails an enormous amount of work, which appears to be done without excessive fatigue by women who are not muscularly as well developed as is the ordinary man. It is important to have some idea of the amount of energy required for writing with such appliances, and the problem is of great interest and serves admirably to indicate the possibilities of accurate scientific instruments for studying questions having a practical everyday value. The general plan of experiment was as follows. The subject entered a special chamber, constituting a respiration calorimeter, usually after a meal, and sat quietly in an arm-chair, with a table before him, reading for an hour or so until the calorimeter was in perfect equilibrium. At this time analyses were made of the residual air, and the heat measurements were begun After the resting period the subject used a typewriter, a record being made of the number of words written and the time occupied. Owing to marked differences in the temperaments of the individuals and in the degree of skill in typewriting, a comparison is at best somewhat speculative, but the data obtained afford a general idea of the work involved in typewriting. It would appear that the work of writing from 1500 to 1600 words per hour on the typewriter results in an increase over the resting metabolism of 10 to 14 grammes of carbon dioxide, 10 to 13 grammes of oxygen, and 20 to 30 calories of heat per hour. Of these factors of metabolism it is highly probable that the truest factor is presented by the total energy exchange as directly measured. From the studies of gaseous exchange made by Zuntz and his associates it has been computed that there is an hourly energy expenditure of about 160 calories over and above the resting maintenance requirement of a man weighing 70 kilogrammes walking along a level road at a rate of 2·7 miles per hour. It is clear, therefore, that the work of typewriting calls for very much less transformation of energy than does that of ordinary walking, but Mr. Roosevelt has scientific sanction for his inclusion of typewriting amongst the strenuous activities of life. We have agreed with the ex-President in this estimate, since we discovered that a quarter of a pound weight was necessary to depress one key of a commercial typewriter, which may be considered a standard machine. From the point of view of office life, the exercise appears to us to be a distinct advantage to the operator.

THE TUBERCULOSIS EXHIBITION AT THE WHITE CITY.

THE Tuberculosis Exhibition, which was inaugurated in the early summer at the Whitechapel Art Gallery by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis with such success that 70,000 people visited it in its East-end quarters, has now been moved to Shepherd's Bush, where it forms one of the features of the White City. On August 6th Lord Balfour declared the Exhibition open in the Machinery Hall in the presence of Sir William S. Church, Sir Hermann Weber, Dr. C. Theodore Williams, Dr. Edward Squire, Mr. H. Hammond Smith, and others prominently associated with the national prevention of tuberculosis. The exhibits are in all respects similar to those shown at Whitechapel, which we have described. A fresh inspection has confirmed our opinion of their educational value, and we were especially impressed with the excellence and completeness of the section devoted to the Edinburgh anti-tuberculosis scheme, with its large scale reproduction of a ward at the Victoria Hospital for Consumption at Craigleith, and the many striking diagrams and models each with its salutary lesson. The Paddington Tuberculosis Dispensary also makes a good show, and the many large photographic views of human sleeping-dens, veritable nests of tuberculosis, serve to draw prominent attention to the urgency of the housing problem in our large cities as a prime necessity of the national health. There is, however, one defect in connexion with the present exhibition which we should like to see remedied. We visited it after sunset and found it difficult to see the various objects and charts properly, as they are only lighted by the arc-lamps hanging from the roof of the large Machinery Hall which are quite inadequate for the purpose. This is a great pity, especially as the many trading stalls situated beyond the Exhibition in the same hall are all brightly lit with their own electric light. At the time of our visit these were attracting far more attention than the Tuberculosis Exhibition through which people passed to reach them. In fact, by 9 o'clock, many of its models were being covered up for the night, and the lessons to be derived from entering the model "ideal" and the "real" living rooms of the poor consumptive were quite lost, because an equal darkness pervaded both, even the wide open windows of the latter not admitting enough light from without to show its features properly. We think, too, that prominent notices might be put up outside the Machinery Hall and in some prominent places in the grounds calling attention to the Tuberculosis Exhibition, the existence of which does not seem to be generally known amongst the attendants. This is the more to be regretted as a large number of holiday-makers in London may be expected to visit Shepherd's Bush during this month, and the Tuberculosis Exhibition must be made as attractive as other shows in the grounds if it is to have a proper educational effect. We hope that the appeal for funds to put the Tuberculosis Exhibition on a permanent travelling basis which is now being circulated by the National Association for the Prevention of Tuberculosis may meet with sufficient response, and may add that any who wish to help this beneficent movement should communicate with Dr. J. J. Perkins, Secretary of the Association, at 20, Hanover-square, London, W.

THE PATHOLOGY OF LANGUAGE.

"THE chemists have called 'caloric' what they ought to have called 'calorific.' The Lavoisierian nomenclature, whatever it merits in other respects, is a system of philological monstrosities in which it is fortunate when the analogies of language are only violated and not reversed." So said Sir William Hamilton, and justly. To take an immediate instance: Lavoisier's coinage, "oxygen," can, in philological strictness, mean only that which is "begotten of acid," not that which begets it (as he meant to convey)—Διογενής, for instance, on the analogy of which it is formed, meaning only "Jove-born," not "Jove-bearing." And so on, *ad infinitum*. Sir William Hamilton's compatriot, John Stuart Mill, after endorsing his dictum that "to the Schoolmen the vulgar languages are indebted for whatever precision and analytic subtlety they possess," follows it up with a trenchant onslaught on the harm wrought to language and, *pro tanto*, to exact thinking, by the unscholarly use of words in spoken and written discourse. It will hardly be believed, he says in effect, what circumlocutions the philosophic or scientific thinker is driven to in order to avoid a word which, as originally coined, would have served his purpose perfectly but which has, by unintelligent use, been so deflected from its true meaning that some substitute for it has to be found, at whatever cost. So many men, he adds (writing in 1856), "without even the semblance of an education," are now professional authors, that the language is becoming steadily spoiled for those who can employ it legitimately. And he gives a long list of examples which may be found in the fourth edition of his "Logic." Even in a book which, within the last 18 months, has had middle-class readers by the million, written as it is by a "professional author" who comes under Mill's category, we read of the protagonist's "lying prone on his back"—a *bêtise* which a first year's student in anatomy who had been taught the difference between "pronation" and "supination" could not possibly have perpetrated. To what uses language can be degraded is apparent to anyone whose daily walk may be between hoardings covered with advertisements the pretentious terminology of which would make Milton, as well as Quintilian, "stare and gasp." 60 years ago D'Israeli, in his "Tancred," made delicious fun of the worn-out phraseology then in vogue, much of which survives, with tenacious vitality, after wounds like those of Hamilton and Mill and D'Israeli himself, that should have been mortal! What Mr. George Wyndham in his brilliant preface to the reprint of that "well of English undefiled," North's "Plutarch," calls the "charnel house of decayed metaphor" (meaning the fetid common-places of conventional diction written and spoken), is still drawn upon by the platform declaimer and the prolific novelist to an extent that makes one despair of the future of our language. But such phraseology seems endowed with a charmed life and we shall still be reading of a controversialist "taking up the cudgels" [who takes up "cudgels?" and why more than one?] or "embarking on the next feature on which this question hinges," till we are well-nigh driven to envy the blind or the deaf-mute his privations, or the unlettered his ignorance, or to surmise that Milton, could he be called from the tomb, would almost repent of his having vindicated the "art of printing."

GERMAN TOURS FOR MEDICAL MEN.

THE ninth German tour for medical men will commence on Sept. 3rd and will continue till the 20th, the work of organisation being conducted by the German Central Committee for Medical Tours (*Zentralkomitee fur arztliche Studienreisen*). The permanent address of the general secretary of this committee is Dr. A. Oliven, Berlin N.W. 6, Luisenplatz 2-4 (Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen), but in connexion with the forthcoming tour he will from August 28th to Sept. 3rd have an office in the Grand Hotel Hungaria in Budapest, to which all communications should be forwarded. The preliminary business will commence on the forenoon of Sept. 2nd in the lecture-room of the Physical Institute in Budapest, when Dr. Sig. von Gerlóczy will deliver an address on the local warm springs, after which visits will be paid to the warm baths of the city and to the Saxlehner bitter water springs, under the guidance of Professor A. von Bokay. The party will leave Budapest by train at 7 A.M. on Sept. 3rd, and will spend that and the three following days in various places in Hungary and Austria, the towns visited on those days being successively Pystian, Trenczin-Teplitz, Siofok, Balaton-Fuered, and Abbazia. In all these towns visits will be paid to places of medical interest, such as bathing establishments, sanatoriums, hospitals, &c.; receptions will be held, and addresses will be delivered by local notabilities. Leaving Abbazia on Sept. 7th at 7.30 A.M. the party will proceed by steamer to Venice, where the afternoon and the whole of the next day wil be spent in sightseeing and entertainments. On the 9th the party will arrive at Genoa at 8 A.M. and will leave at 4 P.M. by the North German Lloyd steamer *Prinz Ludwig* for Algiers, which will be reached on the 11th at 8 A.M. The five days from the 12th to the 16th inclusive will be spent mostly at sea, when an address will be delivered daily, three of the subjects discussed being cancer, neurasthenia, and the hygiene of health resorts. The steamer is timed to call at Gibraltar on the 12th at 5 P.M. and at Southampton on the 16th at 1 P.M., and to arrive at Antwerp on the 17th at 11 A.M. The last of the formal meetings will be held on board the steamer on the 19th during the passage from Antwerp to Hamburg, where the party will disperse.

A TELEGRAM from the Governor of Mauritius to the Secretary of State for the Colonies stated that 6 cases of plague, with 5 deaths, were reported during the week ending August 5th, and the Governor of Hong-Kong reported 3 cases of plague with 3 deaths during the week ending August 8th

Mr. Edward Douglas Madge, M.R.C.S. Eng., L.R.C.P. Lond., has received the King's Royal licence and authority to accept and wear the Cross of Officer of the Star of Roumania, conferred upon him by His Majesty the King of Roumania in recognition of valuable service rendered by him.

WE are requested to call attention to the change of address of the London Post-Graduate Association. All communications should now be sent to 20, Hanover-square, W.

SANITATION IN WEST AFRICA.[1]

EARLY in January, 1908, plague broke out at Accra in the Colony of the Gold Coast, and as considerable alarm was experienced lest the disease should spread to other places in West Africa Professor W. J. R. Simpson was asked by the Secretary of State for the Colonies to proceed to Accra to take over the control of the arrangements for dealing with the threatened epidemic. He accordingly left England for the Gold Coast on Jan. 18th, accompanied by Dr. J. A. Haran of the East African Medical Service as his assistant. He was also instructed to visit other towns and districts in the West African colonies of Sierra Leone, the Gold Coast, and Southern Nigeria *to inquire into their sanitary condition*. He likewise received instructions to confer with the local authorities respecting their quarantine laws in order that

with modern practice.

West Africa Professor

rtunities he found for inquiring into the effectiveness of the existing organisation and equipment of the medical service in these colonies from the public health point of view. This report, which is now issued as a Parliamentary paper by His Majesty's Stationery Office, contains 90 printed pages of folio and is illustrated by 80 photographs with 13 maps and plans.

In the present report only a summary of the investigations into the plague epidemic is given, as the detailed report on the outbreak is being published separately by the Government of the Gold Coast. From this summary we find that from January to October, 1908, the notified plague cases in the Gold Coast colony numbered 344, of which 300 proved fatal, yielding a case mortality of 86·6 per cent. The epidemic which commenced at Accra was carried, by panic-stricken natives fleeing for refuge, to other places in the colony, among which may be mentioned Nianyano (a village of less than 1000 inhabitants, where 64 persons died from the malady), Annamaboe, and Brewa. The last-named village, thoug

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at Accra, where 157 deaths were recorded, was mainly bubonic in type and was associated with a plague epizootic among rats. The prevalence in the outlying villages was of the pneumonic kind and was accompanied by no observed infection or mortality in rats. The actual source of the plague and how it was brought to Accra are not given in the published summary. Prior to Professor Simpson's arrival a public health committee had been formed at Accra and certain measures had been adopted for cleansing the town, isolating the sick, segregating the contacts, demolishing infected houses, and for destroying rats. Later, preventive inoculation by Haffkine's method was carried out and was welcomed by the people, *no fewer than* 35,000 persons submitting to the operation without a single untoward result. A laboratory was established for the purpose of aiding the diagnosis of plague and for the preparation of Danysz's rat virus. A land cordon was formed round Accra to prevent the escape of infected persons into the surrounding villages. Persons whose business required them to leave the town had to submit to prophylactic inoculation and were supplied with passports which bore the thumb marks of the possessor, who also carried a certificate that he had been inoculated signed by a Government medical officer. Measures, too, were taken to prevent infection being carried by ships to other ports on the Gold Coast or neighbouring colonies. These measures appear to have been entirely successful in getting rid of the disease. As the colonies of Sierra Leone, the Gold Coast, and Southern Nigeria had different quarantine laws some confusion at first arose in dealing with vessels arriving at the

led Professor Simpson

and provision for disinfection they could abolish quarantine along with its vexatious restrictions upon shipping and commerce. But it is admitted that native deck passengers would still require special treatment. Uniformity of port regulations, it is pointed out, would be of great advantage to all the colonies concerned. Much has already been done to act upon the advice given by Professor Simpson, but more remains to be accomplished before the port equipment of these colonies is complete.

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[1] Report to the Colonial Office by Professor W. J. R. Simpson on Sanitary Matters in Various West African Colonies and on an Outbreak of Plague in the Gold Coast. Printed for His Majesty's Stationery Office by Darling and Son, London. Price 9d.

As regards the sanitary condition of the chief towns and trading centres in the three colonies of Sierra Leone, Gold Coast, and Southern Nigeria, Professor Simpson visited and inspected a number of places and reported upon their sanitary circumstances and administration. He prefaces his remarks by mentioning that owing to the absence of any complete system of registration of deaths he is unable to give any statistical evidence as to the effect of insanitary conditions on the health of Europeans or natives. Nor could he obtain trustworthy data for compiling a sick-rate. But he gives us to understand that neither sickness nor mortality among Europeans is anything like so great as it was in the past. He draws attention to the importance of good housing upon the health of European residents; special attention he finds has been paid in some places to improving the means for storage and protection of the water-supplies used by European officials, but public health measures have still to be taken for the benefit of the general population. His report gives details of the conditions existing in Freetown, Accra, and Lagos, as well as in some other trade centres. He mentions in general terms the insanitary conditions of the places he inspected. In the Gold Coast Colony alone he visited over 50 places and the chief defects common to nearly all of them were the lack of protection of wells, absence of good surface drainage and consequent malarial conditions during rains, unnecessary crowding together of huts upon area notwithstanding the abundance of unoccupied land, unhealthy placing of huts with obstruction of light and ventilation, and the existence of rank vegetation close to dwellings. Most of these conditions, it appears, can be easily remedied or prevented altogether; but there is no special health or sanitary department belonging to each colony interested in, and responsible for, this work. The climate of West Africa, particularly in the interior and away from the coast, is no worse and no more depressing than some other tropical regions; but the prevailing conditions are usually so primitive and so insanitary that there is considerable risk of injury to the health of Europeans who have to reside among them. Professor Simpson thinks that at present sanitary measures need to be concentrated especially on the towns, villages, rest-houses, and encampments. The large marshes away from the villages and towns have little to do with the unhealthiness of the coast. Sanitation need not involve the reclamation and drainage of the West African marshes unless these are close to inhabited places. He gives some rules for laying out new villages on sanitary lines. All this leads up to the need of creating a special health organisation to improve the present insanitary conditions, and he gives some detailed suggestions for constituting a new health authority. We understand that Professor Simpson, when giving evidence recently before the Departmental Committee which the Secretary of State for the Colonies appointed to inquire into the West African Medical Staff, laid before that body his scheme for establishing a special health department in each colony, making it a branch of the West African Medical Staff separate in its functions and its officers not transferable to other medical duties. Those who are interested in sanitation in tropical countries will find much information in Professor Simpson's detailed account of the sanitary condition of Freetown, Accra, Sekondi (the "gateway of the interior"), Cape Coast, Lagos, Forcados, Calabar, and other places described in the latter portion of this interesting report. We are quite in agreement with the contention that if these West African towns and villages are to be rendered healthy their supervision must be undertaken by skilled and specially trained responsible sanitary officials, under whose advice schemes for water-supply, drainage, excrement and refuse disposal, housing and town planning will be carried out, as well as measures for preventing the spread of epidemic and endemic diseases, and the keeping of a strict watch over the actual state of streets and dwellings. Such officials, too, would see to the enforcement of by-laws and regulations framed for the improvement of the public health and for the protection of the native populations.

METROPOLITAN HOSPITAL SUNDAY FUND.

At the Mansion House on July 28th the Lord Mayor presided at a meeting of the Council of the Metropolitan Hospital Sunday Fund, the object of which was to receive the report of the Committee of Distribution and to order the payment of awards to hospitals, dispensaries, and nursing associations.

The report of the Committee of Distribution stated that the executors of the late Mr. George Herring would pay to the treasurer of the Fund £24,000, being the balance of income available from the estate, which, with £1352 received in dividends, &c., upon securities transferred to the Fund, made the total income from this source to date £25,352. The committee recommended that this sum should be added to the collections, making the total of the Fund to date £67,951, in which is included £2000, the balance of the legacy of £10,000 under the will of the late Mr. Herbert Lloyd; £900, being the legacy, less duty, of the late Mr. Edwin Gayford; and £500 on account of the legacy of the late Mr. C. E. Layton. This year 258 institutions had applied for grants from the Fund, being one less than in 1908. Two institutions were considered ineligible. The committee recommended the distribution of £67,212 to 164 hospitals and institutions, 59 dispensaries, and 30 nursing associations. 5 per cent. of the total sum available for distribution was appropriated to the purchase of surgical appliances during the ensuing year, and 2½ per cent. for district nursing associations.

Sir William Church, in moving that the report be received, said that this was the first time that the Battersea General Hospital—usually known as the Antivivisection Hospital—had been included in the list of institutions receiving a grant. He explained that the reason why this institution had not previously appeared on the list was that the hospital was not founded and maintained with the sole object of relieving the sick and suffering poor, but was also founded and maintained for keeping prominently before the public the work of antivivisectionists The members of its medical staff were narrowed down to medical men who, rightly or wrongly, did not believe in vivisection, and the distribution committee had felt that in these circumstances they were not justified in granting an award to an institution thus limited in its scope and work. This year the committee had been approached by various members of the council, including some of the clerical members, with regard to the Battersea Hospital, and the committee, while still disapproving of the way in which the hospital was carried on, desired to bring the matter before the Council. If the Council determined that a grant should be made the committee would amend the grant recommended and advise a grant on the full basis, which would double the proposed amount and make it £97 10*s*.

Lord Leith of Fyvie seconded the proposition.

Mr. Thomas Bryant moved an amendment to the effect that the grant should be omitted. He said that the hospital cast a great slur upon the profession generally, and he knew that cases had gone from the Antivivisection Hospital to the Bolingbroke Hospital which had been badly treated.

There being no seconder the amendment was not put to the meeting.

Sir Henry Burdett hoped that the authorities of the hospital in question would purge themselves of their pretence as to the special advantages claimed from the antivivisectionist's point of view. He hoped that now they had obtained the grant they would treat disease in a straightforward and honest manner.

The report having been adopted and the awards ordered to be paid, a vote of thanks was accorded to newspapers which had pleaded the cause of the Fund and the meeting terminated with the usual courtesies to the chairman.

The following is a list of the awards recommended:—

General Hospitals.

	£	*s*	*d*
Charing Cross Hospital	1328	3	4
French Hospital...	385	13	4
German Hospital	709	11	
Great Northern Central Hospital	1266	16	4
Guy's Hospital	1679	3	4
Hampstead General Hospital	449	11	8
Italian Hospital...	218	3	8

	£	s.	d.
Kensington General Hospital	Nil.		
King's College Hospital	1744	3	4
London Hospital	6501	0	0
[illegible]	473	8	4
[illegible]	42	5	0
[illegible]	743	11	8
[illegible]	1022	13	4
[illegible]	305	10	0
[illegible]	265	15	0
[illegible]	310	18	4
[illegible]	619	13	4
[illegible]	877	10	0
[illegible]	1457	1	8
[illegible]	198	5	0
[illegible]	203	13	4
[illegible]	164	16	8
[illegible]	2651	5	0
[illegible]	208	0	0
[illegible]	1703	0	0
[illegible]	97	10	0
[illegible]	2784	3	4
[illegible]	2545	16	8
[illegible]	138	18	4
[illegible]	355	8	0
[illegible]	645	19	4
[illegible]	1381	5	0
[illegible]	1366	13	4

SPECIAL HOSPITALS.

CHEST HOSPITALS.

	£	s.	d.
City of London Hospital for Diseases of the Chest, Victoria Park	920	16	8
Hospital for Consumption, Brompton	3141	13	4
[illegible]	1557	16	8
[illegible]	601	5	0
[illegible]	103	6	8
[illegible]	270	16	8

CHILDREN'S HOSPITALS.

	£	s.	d.
Alexandra Hospital for Hip Disease	360	15	
[illegible]	39	0	
[illegible]	54	3	
[illegible]	329	6	
[illegible]	108	6	
[illegible]	969	11	
[illegible]	Nil.		
[illegible]	60	13	
[illegible]	162	10	
[illegible]	1191	13	
[illegible]	160	6	
[illegible]	106	3	4
[illegible]	297	18	4
[illegible]	949	0	0
[illegible]	195	0	0
[illegible]	303	6	8
[illegible]	86	13	4
[illegible]	845	0	0
[illegible]	43	6	8
[illegible]	59	11	8

LYING-IN HOSPITALS.

	£	s.	d.
British Lying-in Hospital, Endell-street	130	0	0
[illegible]	200	0	0
[illegible]	62	0	0
[illegible]	91	0	0
[illegible]	130	0	0
Plaistow Maternity Hospital	52	0	0
Queen Charlotte's Lying-in Hospital, Marylebone-road	563	11	8
Home for Mothers and Babies, Woolwich	80	3	4

HOSPITALS FOR WOMEN.

	£	s.	d.
Chelsea Hospital for Women	305	10	0
Hospital for Women, Soho-square	422	10	0
Grosvenor Hospital for Women and Children, Vincent-square	195	0	0
New Hospital for Women, Euston-road	17	6	8
Samaritan Free Hospital, Marylebone road	426	16	8

OTHER SPECIAL HOSPITALS.

	£	s.	d.
[illegible]	Nil.		
[illegible]	167	18	4
[illegible]	10	16	8
[illegible]	240	10	0
[illegible]	47	13	4
[illegible]	Nil.		
[illegible]	273	0	0
[illegible]	325	0	0
[illegible]	24	18	4
[illegible]	257	16	8
[illegible]	48	15	0
[illegible] square	179	16	
[illegible]	1074	8	
[illegible]	355	6	
[illegible]	40	1	
[illegible]	311	15	
[illegible]	1097	8	
[illegible] street	290	6	
[illegible]	205	16	
[illegible] oss	132	3	
[illegible]	81	5	
[illegible]	223	11	
St. Peter's Hospital for Stone, Covent-garden	62	16	
West End Hospital for Diseases of the Nervous System	550	6	
Western Ophthalmic Hospital, Marylebone-road	122	8	

CONVALESCENT HOSPITALS.

	£	s.	d.
All Saints' Convalescent Home, St. Leonards-on-Sea	27	1	8
All Saints' Convalescent Hospital, Eastbourne	433	6	8
[illegible] Convalescent Home	92	1	8
[illegible]	10	16	8
[illegible]	65	0	0
[illegible] ome, St. Leonards	48	15	0
[illegible] Medical Mission Convalescent Home, Bexhill	19	10	0
[illegible]	108	6	8
[illegible]	32	10	0
[illegible]	15	3	4
[illegible]	26	0	0
[illegible]	21	13	4
[illegible]	71	10	0
[illegible]	21	13	4
[illegible]	65	0	0
[illegible]	10	16	8
[illegible]	79	0	0
[illegible]	65	0	0
[illegible]	444	3	4
[illegible]	292	10	0
[illegible]	652	10	0
[illegible]	16	5	0
[illegible]	92	1	8
[illegible]	64	3	4
[illegible]	54	3	4
[illegible]	108	6	8
[illegible]	195	0	0
[illegible] Children, Brighton	24	18	4
[illegible]	48	15	0
[illegible]	108	6	8
[illegible]	162	10	0
[illegible]	24	18	4
[illegible]	37	18	4
[illegible]	162	10	0

COTTAGE HOSPITALS.

	£	s.	d.
Acton Cottage Hospital	98	11	8
[illegible]	88	16	8
[illegible]	86	13	4
[illegible]	137	7	8
[illegible]	38	0	0
[illegible]	96	8	4
[illegible]	69	9	4
[illegible]	23	16	8
[illegible]	74	7	10
[illegible]	85	11	8
[illegible]	76	18	4
[illegible]	50	18	4
[illegible]	34	17	8
[illegible]	94	11	7
[illegible]	99	13	4
[illegible]	43	6	8
[illegible]	93	17	9
[illegible]	43	6	8
[illegible]	64	3	4
[illegible]	105	9	0
[illegible]	61	15	0
[illegible]	53	10	0
[illegible]	75	16	8
[illegible]	54	3	4

INSTITUTIONS.

	£	s.	d.
All Saints, Highgate	28	3	4
[illegible]	41	3	4
[illegible]	111	11	8
[illegible]	342	6	8
[illegible]	108	6	8
[illegible]	37	18	4
[illegible]	64	3	4
[illegible]	65	0	0
[illegible]	21	13	4
[illegible]	169	0	0
[illegible]	108	6	8
[illegible]	Nil.		
[illegible]	63	18	4

DISPENSARIES.

	£	s.	d.
Battersea Provident Dispensary	210	3	4
[illegible] Dispensary	81	5	0
[illegible]	19	10	0
[illegible]	16	5	0
[illegible]	51	8	7
[illegible]	20	11	8
[illegible]	21	13	4
[illegible]	81	5	0
[illegible]	16	5	0
[illegible]	44	8	4
[illegible]	14	1	8
[illegible]	15	3	4
City Dispensary	65	0	0
[illegible] Dispensary	24	18	4
[illegible]	26	0	0
[illegible]	57	8	4
[illegible]	43	6	8
[illegible]	55	5	0
[illegible]	45	10	0
[illegible]	40	1	8
[illegible]	30	15	8
[illegible]	20	11	8
[illegible]	65	0	0
[illegible]	17	6	8
[illegible]	12	10	8
[illegible]	67	3	4
[illegible]	15	3	4

	£	s.	d.
Kensal Town Provident Dispensary	14	1	8
Kentish Town Medical Mission	22	15	0
Kilburn, Maida Vale, and St. John's Wood Dispensary	37	18	4
Kilburn Provident Medical Institution	54	3	4
London Dispensary, Spitalfields	20	11	8
London Medical Mission, Endell-street	130	0	0
[illegible] mption	33	11	8
[illegible]	67	3	4
[illegible]ry	17	6	8
[illegible]	19	10	0
Paddington Provident Dispensary	39	0	0
Public Dispensary, Drury-lane, W.C.	44	8	4
Queen Adelaide's Dispensary	27	1	8
Ro[illegible]	28	3	4
Ro[illegible] Dispensary	46	11	8
Ro[illegible]	50	18	4
St. Geo[illegible]ary	36	16	8
St. Joh[illegible]	56	6	8
St. Mar[illegible]	58	10	0
S[illegible]	39	0	0
S[illegible]n Dispensary	41	3	4
S[illegible]	55	5	0
[illegible]	50	18	4
[illegible]	16	5	0
[illegible]ispensary	15	3	4
[illegible]	19	10	0
W[illegible]	80	3	4
W[illegible]	109	8	4
W[illegible]	13	0	0
W[illegible]	48	15	0
Whitechapel Provident Dispensary	37	18	4
Woolwich Provident Dispensary	41	3	4

NURSING ASSOCIATIONS.

	£	s.	d.
Belvedere, Abbey Wood	8	5	0
Brixton	28	0	0
Central St. Pancras	21	0	0
Chelsea and Pimlico	28	0	0
East London	182	0	0
Hackney	33	1	0
Hammersmith	49	0	0
Hampstead	21	0	0
Isleworth	8	5	0
Kensington	49	0	0
Kilburn	8	5	0
Kingston	35	0	0
London District	525	0	0
Metropolitan (Bloomsbury)	56	0	0
North London	70	0	0
Paddington and Marylebone	49	0	0
Peckham	8	5	0
Plaistow	78	10	0
,, (Maternity)	103	5	0
Rotherhithe	8	5	0
St. Olave's (Bermondsey)	28	0	0
Shoreditch	63	0	0
Sick Room Helps Society	14	0	0
Silvertown	12	8	0
South London (Battersea)	63	0	0
Southwark	42	0	0
South Wimbledon	20	13	0
Tottenham	7	0	0
Westminster	28	0	0
Woolwich	28	18	0

MEDICINE AND THE LAW.

A Certificate of the Cause of Death followed by an Inquest.

IN a letter published in THE LANCET of July 31st, p. 321, referring to an annotation in our issue of July 24th, p. 243, Dr. E. J. Toye quoted from Section 20 of the Births and Deaths Registration Act, 1874 (37 and 38 Vict., cap. 88), the words, "In the case of the death of any person who has been attended during his last illness by a registered medical practitioner, that practitioner shall sign and *give to some person required by this Act to give information* concerning the death a certificate stating to the best of his knowledge and belief the cause of death." From this Dr. Toye argues that a medical man has no discretionary power to withhold a certificate which, in the words of the annotation referred to, "cannot conscientiously be granted." The word "shall," no doubt, is mandatory, but the medical man has to consider the facts of his case and to apply the law to them. He has to consider whether he did attend the deceased during his last illness, and in the case commented upon in the annotation the coroner's jury, and the coroner who presided, appear to have had doubts upon this point, although they did not employ the words of the section. At all events, if the certificate had been refused and adverse comment had been made, that would have been one of the answers open to the medical man. Again, he may not have such "knowledge and belief" as will justify him in assigning a cause. "The best of a medical man's knowledge and belief" is an expression which does not imply absolute certainty, but equally it does not include mere suspicion or an opinion for the formation and confirming of which his opportunity has been insufficient. As to that sufficiency he is the best judge. It is not quite easy to see what Dr. Toye means when he writes, "The duty of the medical man would simply be that of signing a certificate in all cases of death, whether due to natural or violent causes." The question must still arise whether the medical man attended the deceased during his last illness within the meaning of the section. Dr. Toye's quotation is from the Subsection 2 of Section 20. Subsection 3 is as follows: "Where an inquest is held on the body of any deceased person a medical certificate of the cause of death need not be given to the registrar, but the certificate of the finding of the jury furnished by the coroner shall be sufficient." The section ends as follows: "If any person to whom a medical certificate is given by a registered medical practitioner in pursuance of this section fails to deliver that certificate to the registrar he shall be liable to a penalty not exceeding forty shillings," so that apparently Subsection 3 is intended to apply so as to exempt the medical man from giving a certificate in the class of case referred to, and not to excuse the person to whom it has once been given from passing it on. In conclusion, it may be pointed out that the withholding of a certificate of the cause of death by a medical man in cases where he has attended during a last illness is usually due to some element of doubt, the elucidation of which is outside his functions and beyond his powers.

Workmen's Compensation: Hughes v. Glover, Clayton, and Co.

The widening of the meaning of the word "accident" in order that compensation may be granted by employers to the dependents of deceased workmen has been a noteworthy feature in recent decisions under the Workmen's Compensation Act, 1906. In the latest case, Hughes *v.* Glover, Clayton, and Co., decided by the Court of Appeal, the workman, who was employed by a firm of shipbuilders, was engaged in tightening a nut with a spanner, when a companion saw his foot slip forward and then saw him fall on his back. He was found to be dead, and post-mortem examination showed that a very large aneurysm of the aorta had ruptured, the medical evidence being to the effect that in the condition in which it had been this result might have taken place from very slight exertion or might even have occurred during sleep. It was not proved that the slip of the foot mentioned was in any way responsible for the death, and the finding of the county court judge and the judgment of the Court of Appeal were based upon the assumption that, in fact, the man had suffered from aneurysm and that the exertion of using the spanner in the ordinary course of his work had brought about the death which might have ensued at any time upon any other not extraordinary cause. The county court judge held, however, that on the authority of cases already decided the death under consideration was due to an accident and the Court of Appeal upheld this decision. The case upon which stress was laid in the judgment delivered by the Master of the Rolls was that in which a workman in a weak state of health was allowed to try to work his way home in the stokehold of an Atlantic liner, where he succumbed to heat stroke and died while performing the ordinary duties of a stoker. The Master of the Rolls cited the following passage from the judgment then delivered by Lord Loreburn, who said: "To my mind the weakness of the deceased which predisposed him to this form of attack is immaterial. The fact that a man who has died from a heat stroke was by physical debility more likely than others so to suffer can have nothing to do with the question whether what befel him is to be regarded as an accident or not. ...... It was an unlooked-for mishap in course of his employment. In common language, it was a case of accidental death." Another case cited was that of Stewart *v.* Wilson's and Clyde Coal Company (5F. 120) in which Lord Maclaren said: "If a workman in the reasonable performance of his duties sustains a physiological injury as the result of the work he is engaged in, this is an accidental injury *in the sense* of the statute." The Master of the Rolls concluded his judgment by saying: "In the present case the workman, in the reasonable and ordinary discharge of his duties, had sustained an injury, a rupture of the aorta. That injury was the result of the work in which he was engaged and the appeal must therefore be dismissed with costs." Possibly this most recent decision, like others, will not be considered to be fully established until it has been submitted to the House of Lords, but the Court of Appeal has apparently followed the precedents laid down in cases already decided by that tribunal. It may be questioned whether Lord Loreburn's opinion was that the case upon which he was delivering judgment was "in common language a case of accidental death." It will seem to many a straining of "common language" to make "accident" include the natural result of any kind of work deliberately undertaken by a person physically unfit to engage in it. Such, however, is the legal interpretation of the word as used in an Act of Parliament which imposes a liability upon practically all employers, and the cases referred to point to the desirable precaution on the part of employers of making all those in their service submit to physical examination before engagement and periodically afterwards. Workmen whose soundness is in any degree open to question are likely to find themselves in the ranks of the unemployed, and the imposing of medical examination upon workmen may bring some employers into collision with trades unions, but these are questions which we need not discuss here. The medical man, who presumably is acquainted to some extent with the physical weaknesses of his coachman, chauffeur, gardener, or other servant of either sex, will do well to note the liability imposed upon him by the law, and will remember that he cannot contract himself out of it.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7472 births and 3311 deaths were registered during the week ending August 7th. The annual rate of mortality in these towns, which had declined in the eight preceding weeks from 12·6 to 10·6, further declined last week to 10·5, a lower rate than in any previous week of this year. During the first five weeks of the current quarter the annual death-rate in these towns averaged only 11·0 per 1000, and in London during the same period it did not exceed 10·6. The lowest recorded annual death-rates last week in the 76 towns were 3·8 in East Ham, 5·3 in Walthamstow, 5·7 in King's Norton, and 5·8 in Bourne- [illegible] he rates in the other towns [illegible] in Bootle, 15·1 in Liver- [illegible] and 18·0 in Newport (Mon.). In London the recorded death-rate last week did not exceed 10·1 per 1000. The 3311 deaths from all causes in the 76 towns last week showed a decline of 86 from the low number returned in the previous week, and included 336 which were referred to the principal epidemic diseases, against 313 and 315 in the two preceding weeks; of these, 127 resulted from diarrhœa, 83 from measles, 52 from whooping-cough, 34 from diphtheria, 28 from scarlet fever, and 12 from "fever" (principally enteric), but not one from small-pox. The 336 deaths from these epidemic diseases last week were equal to an annual rate of 1·1 per 1000, against 1·0 in each of the three preceding weeks. No death from any of these epidemic diseases was registered last week in Croydon, Tottenham, Stockport, Hornsey, Rochdale, York, or in 11 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·7 in Rhondda, 2·9 in Wigan, 3·0 in Middlesbrough, 4·7 in Newport (Mon.), and 5·2 in West Bromwich. The deaths attributed to diarrhœa in the 76 towns, which had increased in the five preceding weeks from 59 to 113, further rose to 127 in the week under notice, and was relatively most fatal in Swansea, Wigan, and Nottingham. The fatal cases of measles, which had steadily declined in the four preceding weeks from 138 to 80, were 83 last week, and caused annual death-rates equal to 1·3 in Coventry and in Salford, 1·5 in Bootle, 4·0 in Newport (Mon.), and 4·4 in West Bromwich. The 52 deaths from whooping-cough exceeded by four the number in the previous week, causing annual rates equal to 1·0 in Middlesbrough and 1·2 in Wigan. The 34 fatal cases of diphtheria showed [illegible]

[illegible] patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospitals, which had been 2737, 2731, and 2667 on the three preceding Saturdays, had further declined to 2564 at the end of last week; 280 new cases of this disease were admitted to these hospitals during last week, against 415, 367, and 296 in the three preceding weeks. The registered deaths in London last week referred to pneumonia and other diseases of the respiratory organs, which had been 132 and 106 in the two previous weeks, rose again last week to 120, but were two below the corrected average number in the corresponding week of the five years 1904–08. Only one death in London last week was directly referred to influenza. The causes of 31, or 0·9 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths registered last week were again duly certified in Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Salford, Portsmouth, and in 53 smaller towns; the 31 uncertified causes of death in the 76 towns included nine in Liverpool, six in Birmingham, and two both in St. Helens and in Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 874 births and 429 deaths were registered during the week ending August 7th. The annual rate of mortality in these towns, which had declined in the seven preceding weeks from 15·5 to 11·8, was last week equal to 11·9. During the first five weeks of the current quarter the death-rate in these Scotch towns averaged 12·3 per 1000; in the 76 large English towns the mean death-rate during the same period did not exceed 11·0. The death-rate last week in these Scotch towns ranged from 9·8 and 9·9 in Aberdeen and Perth, to 13·2 in Dundee and 14·4 in Greenock. The 429 deaths in the eight towns last week exceeded by six the low number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 45 and 39 in the two preceding weeks. These 50 deaths were equal to an annual rate of 1·4 per 1000, against 1·3 and 1·1 in the two preceding weeks; the rate last week from the same epidemic diseases in the 76 large English towns was equal to 1·1 per 1000. Of the 50 deaths last week in the eight Scotch towns from these epidemic diseases, 20 resulted from diarrhœa, 14 from whooping-cough, six from measles, four from "fever," and three both from scarlet fever and diphtheria, but not one from small-pox. The deaths attributed to diarrhœa, which had been 14 and 13 in the two preceding weeks, rose last week to 20, of which seven occurred in Glasgow, four in Edinburgh and in Dundee, and two each in Paisley and Greenock. The 14 fatal cases of whooping-cough were within one of the number in the previous week, and included five both in Glasgow and in Edinburgh. Of the six deaths from measles, against 14 and three in the two preceding weeks, three were returned in Glasgow and two in Aberdeen. The four deaths referred to "fever" slightly exceeded the numbers in recent weeks, three being certified as enteric, and one (in Aberdeen) as cerebro-spinal meningitis. Two of the three deaths, both of scarlet fever and diphtheria, were returned in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 76, 49, and 43 in the three preceding weeks, rose again to 51 in the week under notice, but were three below the number returned in the corresponding week of last year. The deaths in the eight towns last week included 17 which were referred to different forms of violence, of which 10 occurred in Glasgow. The causes of 11, or 2·6 per cent., of the deaths in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 14·4 and 17·4 per 1000 in the two preceding weeks, declined again to 15·2 in the week ending August 7th. During the first five weeks of the current quarter the death-rate in the city averaged 15·9 per 1000, whereas the mean rate during the same period did not exceed 10·6 in London and 12·8 in Edinburgh. The deaths of Dublin residents from all causes last week showed a decline of 17 from the number in the previous week, and included 12 which were referred to the principal epidemic diseases, against nine and 15 in the two preceding weeks. These 12 deaths were equal to an annual rate of 1·6 per 1000, the death-rate from the same epidemic diseases last week being equal to 0·9 in London and to 1·9 in Edinburgh. Of the 12 deaths from these epidemic diseases in Dublin last week, five resulted from diarrhœa, four from whooping-cough, and one each from measles, diphtheria, and "fever," but not one either from scarlet fever or small-pox. The fatal cases both of diarrhœa and whooping-cough corresponded with the numbers in the previous week. The 116 deaths at all ages included 25 of infants under one year of age, and 29 of persons aged upwards of 60 years. Five inquest cases and five deaths from violence were registered during the week; and 40, or 34·5 per cent., of the deaths occurred in public institutions. The causes of four, or 3·4 per cent, of the deaths registered in the city last week were not certified either by a registered medical practitioner or by a coroner; in London the causes of all but one of the 933 deaths registered were duly certified, and in Edinburgh all the causes of death were certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Staff-Surgeon Edward Francis Power has been placed on the retired list (dated July 28th, 1909).

The following appointments are notified:—Fleet-Surgeons: F. J. A. Dalton to the *New Zealand*, on recommissioning; and G. Ley to the *Juno*, on recommissioning. Staff-Surgeons: W. G. Westcott to the *Excellent*, additional, for the *Revenge;* R. H. Mornemont to the *Eclipse*, on recommissioning; L. Lindop to the *New Zealand;* C. R. Sheward to the *Majestic*, on recommissioning; and J. Whelan to the *Adventure*, on recommissioning. Surgeon: S. N. Scott to be surgeon and agent for duty with civilian workmen at Turnchapel and Oreston injured while on duty.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be Captains (dated July 30th, 1909):—Charles M. Drew, Archibald A. Sutcliff, Arthur G. Cummins, Hugh E. Gotelee, Archibald S. Littlejohns, William R. Galwey, Frank A. McCammon, George De la Cour, William Egan, Robert G. H. Tate, Alexander Dawson, Frank Forrest, Augustus S. Williams, Victor C. Honeybourne, Clive T. Edmunds, Valentine G. Johnson, Charles R. M. Morris, Richard E. U. Newman, Ernest W. M. Paine, Frederick D. G. Howell, William H. Gillatt, Patrick Sampson, Marcus G. Dill, John B. G. Mulligan, Edward M. O'Neill, Georgie B. Edwards, John W. L. Scott, William C. Smales, Arthur H. Bond, Thomas C. C. Leslie, Donald De C. O'Grady, Lawrence G. Gibson, Philip S. Stewart, and Timothy W. O. Sexton. The undermentioned Lieutenants are confirmed in that rank: Spencer G. Walker, James A. Clark, Harold H. Leeson, William G. Wright, Albert T. J. McCreery, Harry S. Ranken, John A. Manifold, Samuel S. Dykes, Robert C. Priest, Percy S. Tomlinson, Alexander D. Stirling, George P. Taylor, Robert C. Paris, Alfred W. Bevis, Ernest C. Lambkin, Oswald W. McSheehy, Maurice J. Williamson, Charles L. Franklin, Michael White, James J. D. Roche, James R. Hill, Herbert F. Joynt, Alexander S. M. Winder, James R. Yourell, Philip G. M. Elvery, John Beckton, and William B. Rennie.

INDIAN MEDICAL SERVICE.

Major F. D. Browne, has been appointed to the substantive medical charge of the 112th Infantry at Kohat. Captain A. S. M. Peebles has been appointed to the substantive medical charge of the 18th Lancers, vice Captain R. F. Baird. Lieutenant N. J. Simpson has been appointed to officiate in medical charge of the 2nd-9th Gurkha Rifles. Lieutenant J. B. Lapsley has been appointed to the 3rd Brahmans, and also to hold medical charge of the Cantonment Hospital, Agra.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st South Western Mounted Brigade Field Ambulance: Major George R. Swinhoe resigns his commission (dated May 13th, 1909).

For attachment to Units other than Medical Units.—Arthur Herbert Norris to be Lieutenant (dated June 22nd, 1909).

THE TERRITORIAL CAMPS.

The *Times* military correspondent, referring to the field operations in the New Forest, says that the physique of the men is excellent. The Salisbury correspondent, in referring to the death of a trooper belonging to the City of London Yeomanry, states that the death was quite independent of camp life. "The sanitation of the camps is perfect, and the cooking of the food could not be better in a restaurant working upon a similar scale." He, however, points out that "an aggravation of ...... heat trouble in many instances was the lack of drinking water. Many of the men had emptied their water-bottles long before the morning's operations were over, and no water was to be found at any distance from the camp." The selection of water-supplies for a camp was discussed in the second instalment of the articles on the Territorial Medical Service which appeared in the last issue of THE LANCET, p. 416, and stress was laid upon "quantity."

THE ROYAL VICTORIAN ORDER.

In connexion with the recent visit of the Emperor and Empress of Russia to this country the King has appointed Staff-Surgeon John Smirnoff and Staff-Surgeon Serge Lentovsky, honorary surgeons to His Imperial Majesty, to be Honorary Members of the Fourth Class of the Royal Victorian Order.

THE RED CROSS SOCIETY.

Sir Frederick Treves, referring at a meeting of the British Red Cross Society at Horsham on August 10th to the memorandum which the War Office was about to issue calling upon the Red Cross Society to take the place it ought to take in connexion with the defence of the country, said that the document would be published in the course of two or three days.

Correspondence.

"Audi alteram partem."

THE NATURE OF ANGINA PECTORIS.

To the Editor of THE LANCET.

SIR,—I trust you will allow me a little space, as I could not be at the Belfast meeting, to express my dissent from the views advocated by Sir Clifford Allbutt referred to in your abstract of his paper at pp. 336-7 of your last number in July.

Sir Clifford Allbutt's positive assertion I do not dispute. I quite agree that stretching of the supra-sigmoid portion of the diseased aorta will account for anginal symptoms in a certain number of cases—which are recognisable by fairly definite symptoms,—but whilst Sir Clifford Allbutt has earned the gratitude of clinicians by having so carefully pointed out this mechanism, he must not expect them to accept without challenge his view that aortic stretching is the only mechanism of anginal suffering. The mechanism of angina consists of one or other of at least three or four combinations, and the modes of death, too, are several. The terms angina major and angina minor adopted by Sir Clifford Allbutt imply degrees of the same thing, and as he seems to regard angina as a disease by itself and not a symptom or a syndrome, the terms appear to me to be only justifiable on the view that it also has only one pathology. In this view I cannot acquiesce.

Clinically, as one meets with cases, I would emphatically maintain that the radiating reflection of the pains to one or both arms, to the throat and shoulder. is by no means peculiar to cases of the graver kind of angina, although it may be more frequent in them. I have seen the most acute anginal suffering, with central agony and reflected pains, in [illegible] in which there is [illegible] and in which time [illegible]

[illegible] I do not regard vaso-motor spasm [illegible] of angina. But what is under- [illegible] cannot be dismissed in the light-hearted manner of the professor, for the vaso-motor phenomena are in many cases of the very essence of the picture. In certain cases of organic heart disease with anginal attacks, any of which may be fatal, the acute anginal attack is started and maintained by the vaso-motor spasm and is relieved by the relief of that spasm. I have recorded in Sir Cliffo [illegible] a case of the mos [illegible] regurgitant disease I [illegible] and th [illegible] I have witnessed other [illegible] but of textural heart [illegible] the attack was the same, and I have seen others again—which alone I would regard as cases of pseudo-angina, although I do not like the term—in which there is angina of vaso-motor origin, which may be even severe, but in which the heart—the criterion in prognosis—is sound.

The "pretty fancy" of intermittent claudication, to which Sir Clifford Allbutt playfully alludes, seems to me to be based [illegible] and analogy by Burns, Brodie, [illegible] been supported by some recent [illegible] by Dr. Parkes Weber on ana [illegible] of excessive smokers. But I have already made this letter too long, and for a full explanation of the views which, from reading and experience, seem to me to be most tenable respecting this grave and interesting malady, I must refer the reader to my revised article in the coming volume of Sir Clifford Allbutt's "Cyclopædia of Medicine."

I am, Sir, yours faithfully,

London, August 9th, 1909. R. DOUGLAS POWELL.

AN OPERATION FOR THE TOTAL EXCISION OF TONSILS.

To the Editor of THE LANCET.

SIR,—I was about to publish the results of 300 cases of tonsillectomy as practised by me since 1907, when I read the article by Mr. G. E. Waugh in THE LANCET of May 8th, 1909, and I hasten to publish my results and the method of my operation. There is practically very little difference in the technique adopted by Mr. Waugh and myself. Mr. Waugh does not say from what year he has been practising the method he advocates in the article referred to above. As regards the number of tonsillectomies performed by him up to the date of his publication I must admit that he has done three times as many as I have. But considering the population in London and the climatic conditions favourable for throat affections prevailing there, I do not consider that the number of cases operated on by me, mostly in Bangalore with a population of two lakhs or so, compares unfavourably.

The operation hitherto practised in Europe, so far as I am aware, has been the removal of enlarged tonsils by the guillotine. The cases suitable for guillotine are large tonsils causing difficulty in swallowing and breathing. Such cases were placed on the dental chair and under the influence of nitrous oxide gas the tonsils were guillotined within a minute or two. I have also seen such enlarged tonsils guillotined without any general or local anæsthesia, much to the suffering of the unfortunate patients. This was done at the London Hospital out-patient department by a young and energetic clinical assistant who is no longer there. I refrain from mentioning his name, but when his chief asked him if he would do an operation like that on his own son he gave up this practice, at any rate at the hospital.

Of the cases operated on by the guillotine I have seen several in which the whole tonsil was removed satisfactorily without a vestige of its structure being left behind, but the cases in which a part of the tonsil was left behind after this operation had been many. As these cases were mostly out-patients, I had not the opportunity of following their after-history, and therefore I am not in a position to say how far the tonsillectomy with the guillotine method has proved successful.

But since returning to India I have made a close study of my earlier cases operated on by the guillotine method, and to my gr [illegible] nd that the guillotine was not [illegible] ajority of my cases. In such [illegible] diseased and septic, giving ris [illegible] and pharyngitis and otherwise interfering with the general health of the patients, were not large enough for the application of the guillotine. Besides, the Victoria Hospital, Bangalore, is not provided with a dental chair, and the facility for the administration of nitrous oxide gas is not very great in India. All operations which are not amenable to local anæsthesia or to spinal analgesia have to be performed under chloroform. My earlier cases operated on by the guillotine under chloroform in Colombo and in Bangalore failed to give me any satisfaction. I had to draw the tonsils out with a small pair of vulsellum forceps after adjusting the guillotine and in most cases only a small fragment was thus removed. It appeared to me that the game was not worth the candle. Sometimes the guillotines failed to work, being very blunt, and owing to the want of facility to get them sharpened they had to be sent to London to the manufacturers. This entailed long delay. Under these circumstances it occurred to me that a much simpler operation could be performed without the guillotine and with much better results. Since then I have performed about 300 cases in private as well as at the hospital after the method advocated by Mr. Waugh with slight modification, though I was completely unaware of his method until I read of it in THE LANCET.

The methods I adopt for the removal of tonsils vary with their size and with their association with adenoids or not. In the case of large tonsils in adults I still employ the guillotine under local anæsthesia. The tonsils are swabbed over with a solution of cocaine (10 per cent.) and injected through a hypodermic syringe with a syringeful of either cocaine or novocaine with adrenalin at several points. The solution usually employed for injection is novocaine or cocaine grs. 10, adrenalin ʒi, aqua dest. ad ℥i. Within ten minutes the patient is ready and the tonsils are removed with the guillotine almost entire. Sometimes I use the vulsellum forceps to draw the tonsils out of their bed to engage in the grip of the guillotine. Where the tonsils are not much enlarged though diseased, instead of the guillotine I employ a pair of vulsellum forceps and a pair of curved blunt pointed scissors for their removal; the mouth, of course, is kept open by a gag and the patient is seated on a chair. But in the case of children with diseased and enlarged tonsils who are also invariably subject to adenoids, local anæsthesia is not to be recommended for two reasons. In the first place adenoid growths cannot be successfully anæsthetised by such local measures as swabbing or spraying with solutions such as cocaine or novocaine and adrenalin without much discomfort to the patient, as the growth is situated in the naso-pharynx. Any attempt at such a procedure will lead to much retching and vomiting and to great waste of time when one has several cases to get through. Even if local anæsthesia is complete, the sight of instruments is quite enough in the case of children to produce such a fright as to prevent one from performing the operation. Therefore in the case of children I always employ general anæsthesia and choloroform is the anæsthetic used invariably in India and Ceylon. In operations on the throat and nose the anæsthetic is not pushed to the same extent as required for operations on other parts of the body. Anæsthesia is not necessarily complete. Having partially anæsthetised the patient, the head is allowed to hang well over the edge of the table. The mouth is opened by a gag and the tongue is drawn well forward by a stout silk thread passed through the tip of the tongue. The operator stands behind the head of the patient and draws the tonsil out with a pair of small vulsellum forceps. One disadvantage with the vulsellum is that the diseased tonsillar tissue is likely to give way when pulled out, as it is very friable. A conchotome appears to be preferable, but I have had no experience. I do not use any fine-toothed forceps to mark out the preliminary incision. I think it is quite unnecessary and can be easily left out. Besides, it is not absolutely necessary to define the capsule before the removal of the tonsil. If any pieces are left behind they can be felt by the finger and removed by the scissors or by the punch forceps. Pulling the tonsils by the vulsellum towards the middle line, I begin by detaching the anterior pillar from the underlying tonsil with a blunt-pointed curved scissors, and the whole tonsil is removed. In some cases a piece of tonsil extends down the wall of the pharynx and its removal is easily facilitated by this method, whereas by the guillotine it is not at all possible.

One drawback to this method of removing the tonsils is the hæmorrhage which follows in some cases. It often struck me that the amount of hæmorrhage was out of proportion to the quantity of tonsillar tissue removed. But with the head well hanging over the edge of the table and with the mouth wide open, the hæmorrhage is easily controlled with hot sponges on holders and there is hardly any risk of blood entering the larynx. I have so far never met with any casualty. In Mr. Waugh's experience there has been "practically no bleeding," and he accounts for this by the complete anæsthesia employed for his cases to abolish the laryngeal reflex. He states "the absence of bleeding forms a striking contrast to the sharp hæmorrhage which ensues after the tonsil has been cut across by a guillotine." But my experience has been otherwise. In some cases in which the anæsthetist had accidentally produced complete narcosis I still noticed a fair amount of hæmorrhage. I think the position of the head hanging well over the edge of the table is responsible for the bleeding, as it tends to engorge not only the pharyngeal plexus of veins but also all the blood-vessels of the head and neck. With this exception this position gives one a much better view of the field of operation as the light is not obstructed; there is much less chance for the blood to be sucked into the air passages. Hæmorrhage must necessarily follow any cutting operation of a vascular organ like the tonsil which has five vessels of supply, but in this position it is more efficiently controlled, and the operator is not cramped for want of sufficient space for manipulation. Any of these advantages must be limited with the position recommended by Mr. Waugh. In any case hæmorrhage never lasts for any length of time. It is soon over.

With regard to the after-history, I have so far had no casualty and no trouble with sepsis, except in one case in which one of the submaxillary lymphatic glands suppurated and required an incision. This was in the case of a Brahmin girl very much run down, who was not seen by me after the operation until after the abscess had formed.

The after-treatment consists in swabbing the wounds frequently with a solution of cocaine grs. 10, acid. carbolic. ♏ 10, glycerine and water āā ℥ss. The swabbing is done before and after a meal especially. A gargle of a dessert-spoonful of Sanitas in a tumbler of tepid water is also prescribed. I never had any occasion to prescribe anything internally. The temperature on the first day has never gone above 100° F. The patient is confined to bed for 48 hours and fed on slops; solid food is allowed as soon as he is able to take it. Within a week the wounds heal up, while I have never had any occasion to send my patients to the dentist before the operation as the teeth of the people in this part of the world are sound.

As regards adenoids, I find simple curetting is not satisfactory. For median growth curetting is no doubt sufficient, but one finds frequently adenoid growths on the sides and below the entrance to the Eustachian tubes. Such growths cannot be tackled by the curette, and the attempt may be productive of harm. The adenoid punch forceps are best suited for such cases and they can be easily worked with one finger in the naso-pharynx as a guide.

I am, Sir, yours faithfully,
H. B. MYLVAGANAM, F.R.C.S. Eng.,
Surgeon to Victoria Hospital, Bangalore.
Bangalore, June 16th, 1909.

MERCURIAL INUNCTION IN EARLY TABES

To the Editor of THE LANCET.

SIR,—During the past year I have had under my care a number of cases of early tabes, whom I have treated by submitting them to a prolonged course of intensive mercurial inunction, together with sulphur waters used internally, exactly in accordance with the methods followed at Aachen. The patients experienced but slight inconvenience and were in most cases able to attend to their ordinary duties. I have been impressed with the excellent results obtained. In many of the cases the drug had previously been taken by the mouth for long periods, with but little, if any, benefit. Not only, it appears to me, is this method much neglected in this country but the technique would seem to be imperfectly known. It may be added that the Wassermann test frequently confirms the necessity for treatment, as well as affording objective evidence of its effect, and this before improvement is manifested subjectively. I append very brief notes of two typical cases.

CASE 1.—A man, aged 50 years, acquired lues 30 years ago; mercurial pills taken for two years. For the past six years has had lightning pains, girdle feeling, Argyll-Robertson pupils, and exaggerated knee-jerks. During this period has taken several courses of mercury by the mouth without benefit. The Wassermann reaction was positive. After a course of 100 inunctions the serum test became negative and three months afterwards the sensory discomfort had almost disappeared. His appearance improved marvellously, and while gaining in weight his activity greatly increased.

CASE 2.—A man, aged 60 years. Acquired lues 40 years ago, and was carefully treated. Complained of shooting pains, slight ataxia, and numbness in the lower limbs, existing for two months. The knee- and ankle-jerks were absent. At the end of a course of 60 rubbings both knee- and ankle-jerks returned, and two months after cessation of treatment he was free from discomfort, had put on a stone in weight, and felt better than he had done for years.

I am, Sir, yours faithfully,
Wimpole street, W., August 3rd, 1909. REGINALD HAYES.

VENTILATION IN THE TROPICS.

(FROM A CORRESPONDENT.)

So much of the deterioration of the health of Europeans in the tropics is due to the defective ventilation of their dwellings that this subject demands much more attention than it has hitherto received.

The Englishman from London landing in Bombay encounters a climate the mean temperature of which (79·13° F.) is 30° higher than the one he has left, and the mean amount of moisture in the air is 1·135 pounds per 1000 cubic feet as compared with that of 0·51 pounds in London. The average human body must get rid of 284 units of surplus heat per hour in order to maintain its normal temperature of 98·4° F. with a range of half a degree, and as a hot atmosphere retards the cooling of the body, especially if it be also moist, its movement must be increased in order to produce a feeling of comfort, and the circulation should act over the whole of the body. Away from the coast, with its moist sea breezes and moderate temperature, the hot dry air and part of the light are excluded from dwellings where women and children spend their day, and from offices where men work, the circulation being impeded in some cases by wet screens and in others stimulated by fans in connexion with the screens, but no general hygienic system is observable in these methods and no measure of either light or air supply is discoverable. The air of dwellings is frequently hotter both by night and day, and much less pure, than it would be in a plantation of trees.

The ventilation of dwellings in the tropics presents features that are totally distinct from those of cold or temperate countries; this is proved by the failure of appliances, successful in Europe, that are brought out from time to time to be attached to buildings in hot countries. These inventions depend for their efficiency almost entirely on the movement of the wind, either to produce an induced current by being directed past the outlet of the ventilators or by acting on a rotating head to turn a helix which is intended to pump the air out of a building, and thus cause a renewal of the supply. The warmer the air in the building the greater the need of active ventilation, but in India the period of greatest heat is generally accompanied by a dead calm, which affords no assistance to the ventilator and renders it less efficient than a plain opening. Around the coast line, where the air is generally moist and the temperature rarely reaches 98° F. in the shade, the air within doors is warmer than the atmosphere outside owing to the absorption of the sun's heat by the building, whilst in the plains far from the influence of the when the hot dry air out of doors during the day is so much above the indoor temperature that it is excluded as much as possible. Buildings are also made much heavier, and many are lined with sun-dried bricks to act as an insulator against the penetration of the sun's heat. The closing of the buildings is, of course, unwholesome for the inhabitants, the richer portion of whom build large chambers to retard the fouling of the air, but as excreta escape in much greater quantity from the skin in hot countries than in temperate climates, and as the escape of surplus heat takes place chiefly by evaporation when the air is hotter than the blood, the atmosphere of a closed house is liable to become very impure and unwholesome.

The difference in the air of the plains and of the coast has already had its influence on the construction of houses, but as they are principally owned and built by natives of the country tradition has much more influence than science on the construction, and even if a European architect is employed the owner will insist on the carrying out of his own ideas, and his ideal is chiefly remarkable for the number of openings his building may possess without being ventilated. The typical bungalow is a large building under one pyramidal roof without a single ventilating opening through it. The roof extends to the verandah and is covered with tiles which become very dark with age and absorb heat freely from the sun. The heat is radiated downwards through the ceiling boards or ceiling cloth to the tenants whose ordinary protection is a swinging punkha which accelerates the passage of heat from the ceiling by a downward draught. The heat of the tiles continues to radiate downwards far into the night, although the outer air may be pleasantly cool, and the building has hardly cooled to a comfortable temperature when the sun is again upon it. For cooling the air, a hand-driven fan is used to blow it through a wet screen composed of fine fibrous roots woven into a loose mat, which reduces the air passage to 20 per cent., and as there is no means of regulating the proportion of humidity in the current it is generally too damp, and is dangerous on that account.

The writer once occupied a bungalow in Cawnpore having a [illegible] ound it. The walls, [illegible] tewashed, while the [illegible] with dead fungoid growth which caused them to heat up until it was scarcely possible to sit on the parapet wall at sunset. There was no opening for ventilation anywhere above the windows, and the building offered an excellent opportunity for experiments. A 22-inch square hole was cut in the roof of the largest room and a 10-feet chimney of the same form was fixed on the opening. It was made of the thinnest sheet iron procurable, and was unpainted. It exposed 73 square feet to the light, one half of which received the direct sun's rays. A slight dust haze filled the air at the time when the following observations were made at 2.30 P.M., the hottest period of the day: Temperature of the air in the room, 97° F.; temperature of air issuing from the shaft, 113° F.; increase of temperature in the shaft, 16° F.; velocity of current, 133·2 feet per minute; volume passed per hour, 26,553 cubic feet. The movement of air continued night and day with varying velocity according to the difference of temperature in and out of doors. Within, the air was always fresh and pleasant, and a good coat of limewash effectually reduced the absorption of heat by the roof. The chimney shaft when lying on the ground was found to acquire a temperature of 154° F., and had it been coated with a dead black it would have approached the sun temperature at the time, which was 163° F. This experiment does not seem to have been utilised anywhere else, although it offers a cheap and simple remedy against heat and stuffiness indoors.

In the same house was an office room floored with porous bricks, well pointed with good mortar. Each morning seven and a half gallons of water were poured on the floor and absorbed. This water evaporated during the day into the air of the room. The following readings were taken of the wet and dry bulb hygrometers at noon:—

	Dry bulb.	Wet bulb.	Humidity of air
On verandah	103° F.	89° F.	56 per cent.
In office	88°	85°	87 ,,
Difference	15°	4°	31 ,,

The doors of the room were frequently open, the air was kept in movement by means of punkhas, and the office staff had excellent health.

In hot weather the difference of temperature of the air indoors and out is comparatively small, and as that difference is all there is, in the absence of wind, to produce a current, vertical openings alone are effective in India. A club in the North-West Province furnishes a good example. The billiard-room was lofty; it had clerestory windows beneath the eaves in addition to many doors and windows, but at night the heat of the lamps and the players made the room intolerable in hot weather. A smoke experiment showed that the clerestory windows were practically useless, so a 2-foot hole was cut in the middle of the terrace roof and an 8-foot light iron shaft was fixed in it with a suitable cap. The heat of the lamps produced a strong current and there was no further trouble on account of imperfect ventilation.

In Bombay there is great activity among the building trades and land has risen to an abnormal value. Houses are now built in blocks of many storeys, but although the storeys average from 12 to 14 feet in height, the air is dead for several feet above the windows, and ventilation is further restricted by sun screens descending for three or four feet from the verandah roofs. If the dwellings are in flats the chances of perflation are *nil*, and the tenant contents himself with churning the air of his rooms by the aid of electric fans or punkhas. In England a current of six inches per second can be borne with comfort at 65° F., but such a current would be useless in Bombay in May at a temperature of 89° with 75 per cent. of humidity. Under such conditions one may sit with comfort in a current of three feet per second, and the chief business of life seems to be to get rid of one's surplus heat at a sufficient rate. Indian courts of justice have long been notorious for imperfect ventilation and for the odour of unwashed humanity that pervades them. Surrounded by verandahs and corridors that swarm with pleaders, litigants, witnesses, and hangers-on, silence in court can only be obtained by closing the doors. Work of all kinds in such courts is exhausting, and it is a constant marvel that the Government should allow its highly trained officials to work in such places. A moderate structural alteration would enable these rooms to be ventilated through floor and ceiling with upward currents, allowing the doors to be closed and the noise to be excluded. Ventilation, in so far as it applies to the human being, means a supply of fresh air sufficient for respiration, for the removal of the vapours of the skin and lungs, and also of the surplus heat of the body. In the tropics the removal of surplus heat demands more air than all the rest, and a constant current of adequate velocity is necessary to ensure health and comfort. The necessary velocity of the current depends a good deal on the amount of clothing worn. This in the case of the European is nearly always excessive when indoors, for the current required to carry off his surplus heat through his body clothing is liable to cool his head too much and cause a catarrh. The same difficulty arises at night through the use of a mattress which accumulates heat on the underside of the body. A man who can sleep comfortably on a cane chair in the afternoon, dressed in light cotton clothes, finds sleep almost impossible at night with a lower temperature and still lighter clothing, but it does not occur to him to reduce his bedding until he feels the same temperature above and below. There is a further advantage with the reduced bedding, which may be at times no more than a blanket and a sheet on a canvas cot: he may sleep in a moderate draught with impunity as his body is cooled equally all round. The sense of oppression due at times to the use of a mosquito curtain is diminished or removed by a judicious reduction of bedding, for an ordinary curtain will arrest one-half of an air current that would ensure comfort to the sleeper. The chimney shaft already described is a very useful bedroom ventilator, as its current varies with the daily temperature, and although it cools a room by the circulation of air from without it cannot produce an excessive draught as might a ventilator with a constant motive force. The air-supply passed through a chamber by means of this shaft may be drawn through a wet screen like that attached to the thermantidote, but as this arrangement causes an excessive increase of moisture by lowering the dew point and also by direct evaporation, it is better, when possible, to draw the air-supply through a narrow horizontal shaft of zinc cooled on the outside with a wet jacket. This shaft may be made of cheap zinc or galvanised sheet with a section of 8 by 30 inches, and of a length proportioned to its duty. It is supported by a light exterior frame of wood and covered with the coarsest cotton cloth which is kept moist by means of a long trough with wicks or suitable leak holes. Air drawn through this shaft is cooled without additional moisture, and it offers much less resistance to the current than a wet screen of *Kus-Kus*.

The introduction of electric current in our large cities has simplified the possibilities of good ventilation, but so far the only result has been the substitution of revolving electric overhead fans for the overhead punkhas, neither of which renews the air-supply. There is not in all India a properly ventilated public building in which the air-supply is renewed and cooled to suit the requirements of the season and the occupants. In the large hospitals many lives might be saved of patients whose condition does not permit of their removal if the air of one or two private rooms were modified to correspond in humidity and temperature with that of the nearest hill station. The cost in electrical current to reduce 5000 cubic feet per hour of the hot steamy air of Calcutta or Bombay in May to 75° F. and a humidity of 60 per cent is not excessive nor is the necessary apparatus complicated. In official residences, and especially in public offices, a thorough system of ventilation would not only increase the efficiency of the workers but would also reduce the need for those migrations to the hills that are such an unwelcome drain on the resources of many servants of the Government. Large buildings do not need the multiplication of revolving fans that at present disfigure them. A single fan and motor placed in the highest part of the building, and connected with suitable conduits forming part of the structure, would supply an abundance of fresh air at much less cost than any of the existing arrangements.

SLAUGHTER-HOUSE LITERATURE.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE INFLUENCE OF LARGE TOWNS AND LARGE ARMIES ON THE ABATTOIR PROBLEM.—GREAT DEFICIENCY OF COMPETENT MEAT INSPECTORS IN ENGLAND.—WANT OF TECHNICAL KNOWLEDGE IN THE CONSTRUCTION OF ABATTOIRS.—GERMAN, BRITISH, AND FRENCH BOOKS ON THE SUBJECT.

SINCE the world-wide alarm caused by the revelations, first made in these columns, concerning the Chicago stockyards, a large number of books and official documents or Government reports bearing on similar questions have been issued. In fact, an extensive slaughter-house literature has come into being, each author endeavouring to meet the general desire for more precise information concerning the practical measures that should be enforced so as to secure a supply of really wholesome meat. Of course, there is always wholesome meat on the market; the real point is to render it quite impossible for any unwholesome meat to reach the market. When thus defined it must be confessed that perfection has not yet been attained, though undoubtedly there have been great improvements. The fact is that in many of its most important aspects new problems have grown out of modern social, economical, and political evolution. The acceleration of the means of transit has totally altered the conditions of supply, while this has been more recently still further modified by modern methods of cold storage. Then while railways and steamships have contributed to bring supplies from enormous distances, this is associated with the great increase in the size and populations of towns. At the same time small professional armies have been replaced by armed nations. The prospect of having to mobilise some millions of men in a few days has created a meat-supply and slaughter-house problem that was never contemplated in the days of small armies. In England, it is true, we have no great conscript force, and have not provided for the possibility of calling under arms within 24 hours a million or so of men and of having to feed them. This is, perhaps, one of the reasons why in England we are so much behind other nations in regard to abattoirs, and why, on the contrary, Germany, with its marvellous military organisation, has the most perfect abattoir arrangements. The same reason may explain why the State in England has done so little in regard to the inspection of meat, whereas in Germany there is not a mutton chop on the market but is strictly controlled by Government. However, we are at least accumulating a fair amount of English literature on the subject, and it is no longer absolutely indispensable to resort to foreign authors in the original, for some of the most valuable works in French and German receive early translation. We noticed in these columns recently that most important and practical German work Ostertag's "Handbook of Meat Inspection," which has now been admirably translated into English.[1] It is not a mere handbook; indeed, no one could carry so ponderous a volume in his hands for long, but it is an excellent and authoritative work.

More portable and suitable for quick reference is a work by Dr. William Robertson, medical officer of health of Leith. This is entitled "Meat and Food Inspection,"[2] and is the sort of work that can usefully be carried in the hand. Not only is it a useful guide to meat inspection, but there is a full and easy reference to the text of the various laws affecting the meat trade. On the other hand, this book contains little or no information on the great problem of the construction, the management, and the cost of large and small public abattoirs. This is, however, in the main an architectural, a sanitary engineering, and a financial problem. The technician who would be able to devise the building, the draining, and the ventilation of a public abattoir may not know anything at all about the post-mortem examination of cattle or hogs. Dr. Robertson recognises that in England we are insufficiently armed in respect to the machinery of inspection. The greater number of the existing sanitary authorities declare that they cannot afford to retain the services of a duly qualified veterinary surgeon; and, if they could, there are not a sufficient number of duly qualified veterinarians to do all the work. Consequently Dr. Robertson urges that every medical officer of health and every sanitary inspector should perfect himself in regard to meat inspection so as to fill the existing gaps. This does not seem a good suggestion, for the actual staff is rarely sufficient to accomplish fully the task which it is recognised should be taken in hand. Therefore it would be still less able to undertake such additional duties. It is quite obvious that we urgently need in England an increase of expenditure so as to train and then engage a much larger staff of meat and food inspectors than are actually on the field.

As the control of food-supply also involves extensive knowledge of sanitary engineering, of ventilation, drainage, the cleaning and the disinfection of cowsheds, stables, cattle lairs, and markets, as well as of the mechanical appliances for slaughtering, it is much more practical to concentrate all such work in the sanitary department of each local authority. That does not mean, however, that an ordinary sanitary inspector should become a meat inspector, but that a much larger number of veterinary surgeons and of specially trained assistant meat inspectors are urgently needed in this country to work in conjunction with the various sanitary authorities. In regard to the actual number of inspectors required, when describing the abattoir of Stuttgart I related that one chief veterinary surgeon and six fully qualified assistants with special knowledge of bacteriology are employed.[3] The population of Stuttgart is estimated at 260,000, or one inspector for every 37,000 inhabitants. At Manchester, when last I investigated the matter there were three veterinary surgeons and one inspector of meat. There were further one inspector and two assistant inspectors for fish and fruit, who also visited retail meat shops, and there are still some private slaughter-houses.[4] Even if we count all these inspectors, though some of them are not fully qualified and have [illegible] this only makes a staff of seven, just as [illegible] population of Manchester is set down at 543,969, and consequently there is only one inspector for every 77,000 inhabitants. Can one individual watch over and control the meat-supply of 77,000 persons? And there are many places in England that are not as well off in this respect as Manchester. These figures will help to show the use of such a book as that written by Dr. Robertson, for it will aid in training the new inspectors we so greatly need.

"Our Slaughter-house System," by C. Cash, B.A., together with a translation of "The German Abattoir," by Herr Hugo Heiss (London: George Bell and Sons), will assist to teach how to build abattoirs. In dealing with the Coventry private slaughter-houses I alluded to this excellent and well-illustrated work.[5] It contains descriptions and pictures of the abominable private slaughter-houses still existing in England, and notably at Coventry, together with some of the model public abattoirs of Germany. For larger and more elaborate illustrations, reference may be made to a work entitled "Public Abattoirs," by Mr. R. Stephen Ayling,[6] This book, the author states, was written to demonstrate that public abattoirs are not a luxury but an absolute necessity. They are needed, he declares, to prevent cruelty to animals and the spread of disease among men. The author also insists that they can be made self-supporting and profitable, an assertion which my German experience fully confirms. According to this work there are now 131 public slaughter-houses or abattoirs in the United Kingdom. A few of them have been well planned, others are indifferent, "and the great majority bad." There is no such thing as an abattoir system in England, though on the continent efforts to create such a system were commenced a century ago and have now reached a high degree of perfection. There still remain 318 private slaughter-houses in London entailing much cruelty to animals, with waste of valuable material, and defying systematic and reliable inspection. From these places tuberculous meat can be placed on the market with very little chance of detection. Then there are the "screw butchers" who only buy diseased and dying cattle. These animals they cart away from the farms at night and manage to slaughter and sell advantageously the unwholesome meat thus produced. Mr. Ayling also points out that the care given to the health of live cattle is inadequate, and, as a case in point, he mentions that in 1893 the British Government made an allowance of £100 for research as to the value of the tuberculin test to detect the presence of tuberculosis in cattle, while in the same year the Government of little Denmark devoted £2812 for that purpose, and this was continued for five years, when the annual allowance was raised to £5625.

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[1] Handbook of Meat Inspection, by Dr. Robert Ostertag. Review published in THE LANCET, April 11th, 1908, p. 1031.

[2] Meat and Food Inspection, by William Robertson, M.D. Glasg., D.P.H. With 40 illustrations. London: Baillière, Tindall, and Cox. Pp. 372. Price 10s. 6d. net.

[3] See THE LANCET, April 18th, 1908, p. 1177.

[4] See THE LANCET, June 27th, 1908, p. 1873.

The principal value of Mr. Ayling's book, as already remarked, is the practical information it contains as to the actual construction of abattoirs. The reason why such [illegible] are for the most part defective [illegible] nerally placed in the hands of a [illegible] real knowledge of this special technical question. He consequently merely imitates the defects of neighbouring abattoirs which he has been able to visit. Thus in one case we may get very good engineering and fittings with no architectural merit, and in another case considerable architectural taste and originality may only serve to cover defective principles and equipment. The matter has received very little attention at the hand of the British architects and engineers. Thus a writer on the subject is mentioned as having advocated a red-brown dado so that the splashes of blood may not be apparent instead of asking for white glazed tiles so that the blood may readily be seen and as rapidly washed off. Not only must the walls be washed constantly but the slaughtermen should be provided with comfortable lavatories where they can change their clothes, have douches or baths, and thoroughly clean themselves. Then, if it is a large abattoir, it should be provided with its own destructor and not built near the town destructor, as the dust from the town refuse will penetrate by the ventilators into the cold storage rooms and other parts of [illegible] Mr. Ayling gives plans [illegible] public abattoirs in Great [illegible] lockyards, South Shields, West Hartlepool, Leeds, Glasgow, and several other British towns. His continental experience, however, seems limited to the Paris abattoirs of La Villette and Vaugirard. These he describes very elaborately, though they are out of date and the Paris municipality is now discussing their reconstruction on better and more modern principles.[7]

A handy little publication, with numerous illustrations that help to show how abattoirs should be built, has been issued by the county borough of Belfast. A deputation was appointed by the Belfast city council last February and March to visit certain abattoirs in England and the continent. It cannot be said that the deputation selected the best towns to visit, nevertheless they saw much that was most instructive. This is how the result of the journey is pithily summarised:—"Rotterdam: An old abattoir about to pass away. Hamburg: Splendid business arrangements. Berlin: The best system of meat inspection in Europe.[8] Dresden: A new abattoir in course of construction. Cologne: A modern abattoir in course of operation. Islington; A new abattoir, spoiled for want of room." In the recommendations based on this experience for the construction of a public abattoir at Belfast the deputation have made good use of their continental experience, though it is a pity that when at Dresden they did not manage to go to Breslau to visit the magnificent abattoir, which only cost 10*s.* 6*d.* per inhabitant, and the cattle market that did not cost more than 6*s.* 6*d.* per head of the population. The receipts of this abattoir amount to £60,000 per annum, and about a third of the sum may be considered as profit. Then in Holland they should have seen the abattoir of Maestricht. Here not German but French equipment and machinery are employed. It is considered about the best abattoir in Holland, while that of Rotterdam is one of the worst. The deputation in their recommendations have shown that they still retain a lingering attachment to the old idea of partitions that separate the butchers one from the other. This is [illegible] Indeed, the only arg [illegible] er-hall is the possible [illegible] animals when admitted may suffer from the sight and smell of blood. This objection has been met at the small slaughter-house built by the Admiralty at the Chatham Dockyards. There would be no objection in following this example. The animals might be killed just outside the door, but only killed. The moment the animal has fallen a door should open and a pulley arrangement should drag it into the hall, and there, and only when in full view of the inspectors, should the carcass be opened and the process of dressing begun. There must be no retreating into corners or standing between [illegible]

[illegible] ter house literature, there a [illegible] issued in France on this subject. "Les Abattoirs Publics," which I quoted when describing the Paris municipal abattoir at La Villette, is a veritable monument of learning and research, not limited to France, but extending through Europe, America, and Australia. The first volume is by M. J. de Loverdo, sanitary engineer, and it has 903 pages, 404 illustrations, and deals mainly with the construction of abattoirs, while the second volume has 648 pages with 110 illustrations and treats rather the question of the inspection of animals and meat. The principal contributor to this second volume is Dr H. Martel, chief veterinary surgeon in the service of the Paris municipality. Dr. H. Martel is likewise the principal author of the very elaborate and interesting annual reports published by the Paris Prefecture of Police on the veterinary sanitary services of the department of the Seine. Here all the details relating to the inspection of the food-supply for the capital of France and the surrounding suburbs will be found. Thus, for instance, we are told, and statistics prove, that the number of cases of tuberculosis among the cattle at the Paris cattle markets has greatly decreased. But this is not due so much to improved conditions as to the severity of the examination of the animals, so that cattle-breeders now know they are not likely to succeed in smuggling diseased animals through. No one can examine this publication without feeling that the French nation, which a hundred ago years stood first and set the best example in regard to the abattoir question, is now fully alive to the fact that the high standard has been fallen away from. But France will soon regain much of the lost ground. It is to be hoped that the time is not far distant when Great Britain will also enter into the lists and endeavour to take a worthy place in this generous competition between nations striving to control to the best advantage the food on which the people live.

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[8] See THE LANCET of July 14th, 1894, and Feb. 2nd, 1907, p 317.

THE SIXTH NORTHERN CONGRESS OF MEDICINE.

(FROM OUR OWN CORRESPONDENT.)

IT was originally intended to hold the Northern Congress of Medicine at Bergen in Norway, but partly for political reasons the Norwegian President of the Congress proposed as a more suitable place the Skaw, a bathing resort of no great size in Denmark, and a considerable number of the most prominent medical men in Denmark, Finland, Norway, and Sweden accordingly met here under the presidency of Dr. **KLAVS HANSSEN** (Bergen).

Pulmonary Tuberculosis.

The proceedings commenced with a discussion on the Early Diagnosis of Pulmonary Tuberculosis. Professor **SAUGMANN** of Vejle Sanatorium in Denmark introduced the subject of the ordinary clinical diagnosis, while Dr. **TILLMAN** of the Oesteraasen Sanatorium in Sweden discussed the specific diagnostic methods.

Professor **SAUGMANN** said that the diagnosis was not merely a subtle stethoscopic one, but ought to rely on a general clinical examination. In some cases the diagnosis might be made in the absence of objective stethoscopic alterations, based only on a thorough anamnesis and a complete examination of the whole organism, special attention being paid to signs of absorption of toxins in the fluids of the body. The first objective signs were often to be found by a study of the temperature curve. A useful inference might sometimes be drawn from the so-called Penzoldt's phenomenon—namely, if the rectal temperature after a brisk walk of an hour's duration rose above 38° C. the case was suspicious. As to the stethoscopic signs, the "rough" (*rauhe*) respiration, described by Turban, was often a sound of muscular and not of pulmonary origin. Dr. Krönig had described a simple, non-tuberculous induration of the apex of the lung in chronic nasal obstruction, but this was only a healed or a very chronic form of pulmonary tuberculosis. Searching for tubercle bacilli often gave a negative result; he felt disposed to consider cases in which tubercle bacilli were found as being no longer incipient in the anatomical sense of the word. The diagnosis ought to be made before the appearance of tubercle bacilli in the sputum.

Dr. **TILLMAN** laid stress on the practical importance of the diagnostic subcutaneous injection of tuberculin, particularly when resulting in a local reaction. Complete absence of response to the injection of large doses (10 milligrammes) excluded tuberculosis. The patients must have been free from pyrexia or hæmoptysis for several weeks before the injection. Pregnancy and diseases of the heart or kidney were contra-indications. The tuberculin test was only to be applied when other means of diagnosis had failed. As the occurrence of râles was an important criterion of the positive reaction, the injection ought only to be made on patients without râles. The first dose was one- or two-tenths of a milligramme. If there was a positive temperature reaction an injection of pure water ought to be tried in order to control the result. The local tuberculin tests (that of von Pirquet, or the ophthalmo-reaction) were of no importance for the diagnosis of incipient pulmonary tuberculosis, as they only showed the presence of tuberculosis somewhere in the organism. The agglutination test and determination of the opsonic index have for the time being small practical value.

In the discussion Professor **LAACHE** (Christiania) communicated the result of some researches made by his assistant, Dr. Tillisch, showing the diagnostic importance of abolished or lessened motility of the inferior pulmonary border.

Professor **ISRAEL-ROSENTHAL** (Copenhagen) expressed his hesitation in adopting the subcutaneous tuberculin test as it presented a certain amount of danger in some cases.

In closing the discussion Professor **SAUGMANN** said that the von Pirquet test was not always reliable; he had himself suffered from acute pulmonary tuberculosis 18 years ago, and at the present time responded positively to the ophthalmo-reaction but negatively to the von Pirquet test.

Professor **GRAM** (Copenhagen) read a paper by Dr. **ELLERMANN** and Dr. **ERLANDSEN** on the Production of Sensitiveness to the Cutaneous Tuberculin Test of von Pirquet. Their researches showed that this test sensitised the organism in such a way that the reaction was stronger on repetition of the test than at its first application. The subsequent reaction was a little feebler than the first one in only 8 per cent. of the cases; in 8 per cent. it was unaltered; and in 84 per cent. it was stronger. If the tests were carried out on two successive days there was no difference, but after a pause of four days an increase in the reaction was distinctly observed. Sensitiveness was likewise observed after an interval of several months. This sensitiveness was not a local process, as the new test might be applied to a superficial region of the body at a distance from the region chosen in the first instance. It was only after absorption of the tuberculin that sensibilisation was observed. It was not possible to sensibilise an organism that was quite free from tuberculosis.

Dr. **WURTZEN** (Copenhagen) communicated the results obtained by himself and Dr. Kjer-Petersen in the treatment of pulmonary tuberculosis by the production of artificial pneumothorax. They had treated 27 cases in all, but the formation of adhesions between the pleural membranes prevented the establishment of a complete pneumothorax in more than seven of the cases. In three of the cases the treatment appeared beneficial, and they thought that one case of acutely developing pulmonary tuberculosis was saved by this means, as it seemed at first quite hopeless in all respects. In one case the treatment had arrested a dangerous hæmoptysis. As a rule, however, the pathological process in the other lung at last annihilated the favourable results first obtained.

Professor **SAUGMANN** said that he had tried the treatment for 42 patients, in ten of whom he had not succeeded in producing an effective pneumothorax. In one case the lung was kept compressed for ten months, and when the treatment was discontinued because it was found that the patient's pyrexia was not caused by pulmonary tuberculosis the lung expanded again quite well without having sustained any injury to its function. In two cases that came to post-mortem examination the pathological process was seen to be healing. On the whole, Professor Saugmann found the treatment satisfactory.

Dr. **KR. THUE** (Christiania) said that he thought the treatment was very efficacious in certain cases of advanced unilateral pulmonary tuberculosis. In one instance he had observed pyo-pneumothorax originating from a lung cavity as a result of the forcing of adhesions, and in two instances collapse from a pleural reflex.

Dr. **VON BONSDORFF** (Finland) and Dr. **FIGENSCHOU** (Christiania) corroborated the statement of Dr. Arneth, that a considerable increase in the number of the mononuclear leucocytes accompanied the aggravation of the disease.

Functional Diagnosis of Various Diseases.

The second day of the Congress was taken up by a discussion on Functional Diagnosis. Professor **SCHAUMANN** (Helsingfors) discussed the importance of functional diagnosis as compared with the anatomical diagnosis fostered by the great schools of morbid anatomy in Germany and France.

Dr. **SIGVARD MADSEN** (Bergen) read a paper on the Functional Diagnosis of Heart Diseases. He said that this method of diagnosis was based on an examination of the pulse, respiration, and blood pressure after the patient had performed a definite quantity of work. He did not ascribe great importance to the variations in blood pressure, but relied on an examination of the pulse and respiration After a person had taken exercise equivalent to 300 kilogramme-metres of work the pulse ought to attain its normal frequency in from one-half to three-fourths of a minute, and it ought all the time to allow of being easily counted. The respirations ought not to exceed 20 per minute and ought to go down again to the normal in half a minute.

In the discussion Dr. **RUBOW** (Copenhagen) laid particular stress on the examination of the alterations of the respiration. He said that in patients suffering from heart disease, it was not sufficient to determine the respiratory frequency, as their dyspnœa might show itself in deeper respiratory movements, the characteristic feature being a greater inflation of the lungs than normal.

Professor **P. F. HOLST** (Christiania) and Professor **ISRAEL-ROSENTHAL** said that they were somewhat sceptical as regards the reliability of the examinations mentioned

Dr. **V. SCHEEL** (Copenhagen) drew attention to the fact first mentioned by Quincke, that while in normal persons the diuresis was greater during the day than during the night, the contrary obtained in patients suffering from heart disease as a result of the freer renal circulation in the recumbent position.

The PRESIDENT said that it was of importance to decide whether the heart was able to perform the work actually demanded of it, and that this was best done by taking a walk with the patient. He thought it was possible to judge separately of the function of the right and left sides of the heart. Insufficiency of the right side of the heart produced dyspnœa without alteration of the pulse, whereas this latter symptom was the first to appear in insufficiency of the left side of the heart.

Dr. OLAF SCHEEL (Christiania) opened a discussion on the Functional Diagnosis of Diseases of the Stomach and Intestines. In mentioning the examination of the motor function of the stomach he recommended Faber's modification of Bourget's test meal. The function of the intestines was best judged of by an examination of the fæces while the patient was on a diet of uniform composition, as, for instance, that described by Schmidt.

Dr. VERMEHREN reported a case showing how extremely cautious a surgeon has to be before considering the diagnosis of ulcer of the stomach as perfectly certain. The patient in question was a woman presenting every symptom of ulcer of the stomach. Gastro-entero-anastomosis was accordingly performed, on which occasion a stellate scar and a thickening of the anterior pyloric wall were observed during the biopsy of the stomach. Two days later she died from bronchopneumonia, and the post-mortem examination failed to reveal anything abnormal in either the stomach or duodenum. He suspected that not a few cases reported as verified by operation would on closer examination turn out to appertain to the same spurious class as that mentioned by him.

Dr. VICTOR SCHEEL (Copenhagen) opened a discussion on the Functional Diagnosis of Kidney Diseases. He said that no single test gave reliable information. The degree of albuminuria or the mutual relation between the different albumins was of little assistance, but the determination of the accommodating power of the kidneys was of greater importance. In the test originating with Dr. Kl. Hanssen and Dr. Gröndahl, the patient was given alternately a diet rich in fluids and one in which the solids preponderated; in healthy persons the urine accommodated itself to the quantity of water contained in the food, whereas this faculty decreased with increasing severity of the nephritis. The methylene-blue test was also of some value.

Dr. TALLQUIST (Helsingfors) said that in his opinion functional diagnosis was most important for the differential diagnosis of the various forms of polyuria.

Miscellaneous Communications.

The discussions were followed by a series of minor communications. Professor FABER (Copenhagen) read a paper on the Diagnostic Value of the Estimation of Pepsin in the Gastric Contents. He had used Liebmann's peptometer, and thought the method of some value for the diagnosis of gastritis.

Professor SANTESSON (Stockholm) reported on the Mortality from Pneumonia and Typhoid Fever in Cases treated with or without Alcohol. The greatest mortality was found in those treated with alcohol, but as alcohol was presumably more often given in the severe cases the statistical data did not warrant an opinion unfavourable to alcohol.

Dr. RUBOW (Copenhagen) communicated his researches on the Nature and Treatment of Dyspnœa associated with Heart Disease. He said that in severe cases of cardiac insufficiency an increased inflation of the lungs was observed. While in healthy individuals the volume of respired air was from seven to nine litres per minute, there often was in the cases mentioned a respiratory volume varying from 10 to 15 litres per minute, the result being a higher percentage of oxygen in the alveolar air, and consequently also in the blood, so that in this way the organism brought about a sort of compensation.

Professor P. F. HOLST (Christiania), in a paper on the Action of Digitalis, said that in 40 systematically examined clinical cases he had failed to observe any difference in the action whether he used old or new digitalis leaves; neither had he observed cumulative effects.

Professor AXEL HOLST (Christiania) communicated experimental investigations made by himself and Dr. Frolich on the Cause of Scurvy and Beri-beri during Sea Voyages. He was inclined to accept Nocht's theory that the latter disease, so often observed in Norwegian ships, was related to scurvy and was caused by deterioration of the food. Guinea-pigs fed on a diet tending to cause scurvy developed a disease in all important respects similar to beri-beri as met with on board ship when, besides the food mentioned, they were [illegible] out [illegible] that [illegible] ased [illegible] sted [illegible] ina- [illegible] the human subject.

THE TERRITORIAL MEDICAL SERVICE.[1]

(*FROM A SPECIAL CORRESPONDENT.*)

III.—THE SANITARY UPKEEP OF CAMPS, &C.

BEFORE camps or bivouacs are entered upon concise orders as to the conservancy arrangements connected with latrines, urinals, disposal of refuse, sullage water, &c., must be framed by the medical officers concerned and issued in the name of the officer commanding to all units. Orders in themselves are useless unless intelligently interpreted and understood, and it must be impressed on all concerned that the fighting power of an army depends on its health, and that the general health of the army depends on the strict observance by the individuals that help to form it of the orders promulgated, more especially concerning the following: 1. Each man that uses a latrine must cover his dejecta with dry earth. 2. Each man must use the urinals provided; if found urinating within camp boundaries elsewhere, either by night or day, he should be severely punished. 3. All refuse, horse litter, and sullage to be removed from camp daily and disposed of.

Latrines.

Before occupation of a camp the medical officer with the advance party should mark off with flags the position of the latrines. The site should be to leeward and the trenches should be so planned as to lie in echelon on the outward flank on an area not likely to be flooded by storm water from higher ground, and well away from the water-supply (river, ponds, wells, &c.) and at least 100 yards from either the nearest tent, ablution place, cooking place, or slaughtery. In the case of some of the Territorial training camps which are situated near towns the dry-earth disposal system may be in force, being carried out by contract. In this, latrine seats are provided, and there should be two sets of buckets to allow of replacement of those removed nightly for emptying and cleansing. In the dry-earth system it is essential that the earth should be finely sifted (through half-inch mesh sieves) and thoroughly dried before use. When trench latrines are used the system of long deep trenches formerly employed is not to be recommended, as they are offensive and attract flies. The ground in front of the trenches from their frequent use become sodden with urine, and mud gets carried back into camp on the men's boots. If infected by a typhoid carrier with bacilluria this mud may cause an outbreak of enteric fever in the camp.

During recent years the shallow system of latrine trenches has been employed at manœuvres in some places and has given good results. The trenches are small and shallow, being 3 feet long, 1 foot broad, and not more than 2 feet deep, generally 1 foot being sufficient. The number required is approximately 5 per cent. of strength per diem—e.g., five trenches will meet the requirements of a company of infantry for one day. These trenches should be arranged in parallel rows (in echelon) with an interval of not more than 2 to 2½ feet between each trench. This distance is important, as being limited it makes the man use the trench properly and it cannot be used otherwise than in a "bunker" position, and thus a spillage of urine on the grass or soil in front of the trench is avoided. When the first trenches are filled with excreta to 6 inches from the surface they are closed in and fresh trenches may be dug in the interspaces, if space is limited, otherwise it may be better to use a fresh area. In digging these trenches the surface grass sods are carefully raised in sections and laid on the grass at a short distance away; the earth is then cleared out of the trench and piled in a heap either behind the trench or at its end farthest away from camp. The earth on the top of this heap is pulverised with the spade and finely sifted to have it ready for use, and a trowel or scoop (easily improvised by tin cans or pieces of board) laid on the top for each man to cover his dejecta with. If the camp or bivouac is likely to be occupied for any length of time the area for the first trenches to be used should be farther away to allow of fresh ground being taken up between those to be first used and the new ones, thus preventing men from walking over soiled ground and perhaps carrying urinary infection into the camp. In planning measurements for a trenching area for a company, allow a front of 12 feet and a depth of 24 feet for each two days; this will give sufficient room for passage to and from the trenches.

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[1] Nos. I. and II. were published in THE LANCET of July 31st and August 7th.

Strict sanitary instructions must be issued. Men should be ordered to put a few scoops of the dried pulverised earth on their dejecta after using the latrine. The sanitary police should patrol the area and defaulters should be severely punished. Latrine paper is to be kept in tin boxes and to prevent it blowing out of the trenches after use in windy weather a latrine screen should be set up as close as possible to the trenches, leaving, however, a space of three feet between it and those in use. In some camps a light hand rail is placed about two feet off the ground. It is not, however, necessary. The length of time shallow trench latrines may be used must depend on weather conditions and amount of ordure; generally two days, or, perhaps, four may be allowed if well covered by finely sifted earth and if the contents of the trenches which tend to get heaped up in the centre are levelled. In closing the trenches after levelling the contents the clay should be closely packed in and hammered tightly if space allows and if the contents are not liquid. After closing, litter, brushwood, or rubbish should be burned over the entire surface of the trench to sterilise any spillage. The grass sods should then be carefully replaced and the position of the covered trench marked with flags to prevent accidents to passers-by or horses. When on the march with troops company officers should detail men to dig a trench at each halt similar to that described, and before starting again it should be covered in with clay. Spades should be carried for this purpose in each company, and not in their wagons, the kits of the men carrying spades being carried in the wagons instead. When camp is reached the latrines could be dug at once without having to wait for the baggage to come up. Men should not be allowed to fall out until the latrines have been reported to company officers "as ready" and their position indicated by a distinguishing flag pointed out to the men. Outposts and men on picket duty must be made to provide themselves with latrines also. All latrines must be personally inspected daily by the officer in sanitary charge of each unit.

Urinals.

This is a much more difficult subject to deal with in camps and bivouacs from a sanitary point of view than latrines, as owing to the distance of the day urinals from camp a separate set closer by may have to be arranged for night use.

Day Urinals.—For day urinals, pits or trenches may be dug adjacent to the latrine trenches. If the soil is a sandy or absorbent one the urine soon disappears and all goes well, but if not, a urine-sodden quagmire results, which clogs the men's boots and is carried back into camp, and if infected by a typhoid carrier with bacilluria enteric fever might result. In all cases exposed urine-sodden soil must be covered at least once daily with clean dry earth to protect it from flies. Urine trenches wherever possible should, like latrine trenches, be dug to leeward in echelon on the outward flank of the camp on a site not likely to be flooded by storm water from higher ground, well away from the water-supply, and, when the ground allows it, at least 100 yards from the nearest tent, cooking place, or slaughter place. The trenches should be shallow, three or four feet deep, and the earth at the bottom well loosened. If the camp is to be occupied for a week or ten days the trenches should be from four to five feet deep, since the use of shallow trenches will only result in a larger extent of surface pollution. Urine trenches should be disinfected daily by burning in them a layer of dry litter. Tilbury-Brown made trials at manœuvres of a system of shallow urine trenches leading into pits filled with large stones. A circular pit three feet deep and two feet wide was dug, and this was filled with large stones. Two trenches six feet long and having a fall of one inch for each foot to the central pit were dug at an angle to, and running into, the central pit, the sods being carefully removed and the soil heaped up around the central pit, which was also screened off with a circular screen to prevent the men from using it. The trenches were used for about two days, and when foul they were filled in and new ones dug round the central pit like the hands of a clock. The entrance opening in the outer screen was moved round as new trenches were dug, so as to compel the men to enter only between the trenches in actual use. The results were satisfactory and preferable to the usual open pit; surrounding ground was little fouled and many men could use the trenches at the same time. Smell and flies were absent.

Night Urinals.—These are still more difficult and dangerous to deal with than day urinals in camp. They must be easy of access, only a short distance from the sleeping quarters, and easily found, their position being indicated either by a lantern, a white post, or by a path marked out with stones, preferably white, to enable the soldier to find his way thither in the dark. Firth recommends when urine tubs cannot be provided, or when the day urine pits are any distance from the men's tents, the digging of shallow urine pits near the men's lines, but says that this practice should be resorted to as rarely as possible and must be zealously safeguarded against abuse, and at all times such pits should be carefully filled in at dawn McGill also, from service experience, recommends that night urinals should be located in the space between the perimeter and the outer line of tents on the side opposite to the cooking places, their position being indicated by a lamp or white post In standing camps receptacles may be used (empty kerosine oil tins), being taken into use at nightfall and removed at *reveille*, when the sites on which they were placed should be cleaned and disinfected with burning litter or a strong solution of chlorinated lime. In temporary camps, where receptacles are not available, McGill recommends the digging of a few broad shallow trenches filled with 3 to 4 inches of dry litter, or better still, wood ashes, this being removed and buried after dawn and the trenches disinfected. Tilbury-Brown, in the camps at the Hampshire manœuvres, used wooden tubs for night urinals; these were placed along the streets and flanks (not in the lines) and by the side of whitewashed posts upon which lights were hung at night. In many cases stands were made for the tubs. Four tubs were placed outside the canteen. The tubs were emptied during the time they were mostly used—i e., at 10 P.M. and *reveille*. They were not emptied into the day urinals, but into special soakage pits. During the day-time the tubs were either inverted or filled with water. During field operations small shallow urinals were dug every night, one for each half battalion, and a light was placed by each, and they were filled in each morning. The results were very satisfactory. During the South African war the subject of night urinals gave the writer considerable trouble, and he adopted the simple plan of having a 3-foot circular pit dug at each corner of the regimental bivouac with a pile of stones erected beside it for a land-mark and a line of large stones as a guide to its position from the nearest place occupied by the men; sometimes white stones (quartz) were available. The pits were sprinkled with clay each morning to keep away flies, and were filled in when fouled and fresh ones dug. In standing camps, beer barrels were obtained and sawn in half, forming tubs; these were removed in the morning, and after cleansing were treated with strong disinfectants.

Cooking places.

These should be located on the flank or the side of the camp opposite to that near the latrines and the urinals, and on no account should a cookhouse be less than 100 yards from the nearest latrine or urinal; in fact, the farther they are away the less the chance of contamination of food-supplies by flies and dust. The cooking places and their vicinity must be kept scrupulously clean, and neither kitchen refuse nor sullage water is to be thrown on the ground; the former should be collected in buckets and buried outside the camp perimeter daily. In order to separate the grease from kitchen sullage, some authorities recommend the construction of small intercepting grease pits made with sticks, straw, grass, or heather, which can be removed daily and burnt. Special attention should be directed to the means and methods of storing food preparatory to cooking and also to the proper cleansing of the cooking utensils.

Refuse disposal.

No rubbish of any kind should be allowed to lie about in the camp or its vicinity. To collect small rubbish, pieces of orange peel, bits of paper, &c., a good plan is to have empty sacks, or barrels, or boxes with moveable lids placed at the end of each row of tents. These can be cleared out periodically and the contents *burnt* well away from camp or over the latrine or urine trenches before the surface sods are replaced, thus being utilised for sterilising purposes. Litter or refuse in general should not be buried if it is possible to destroy it by fire. In stationary camps, destructors or incinerators if fuel is available will prove a boon, but failing these a ready and effective method is to throw up a bank of earth in the shape of a horseshoe 2 or 3 feet high, and to burn the litter inside; this method has been employed in Indian frontier expeditions with success. All litter and refuse must be disposed of *daily* to obviate the attraction and breeding of flies.

The daily disposal of excreta and also of refuse constitutes one of the golden rules of camp sanitation.

(To be continued.)

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The William Mitchell Banks Memorial Lecture.

BY invitation of the Council, Senate, and Faculty of Medicine of the University of Liverpool, Professor Harvey Cushing of the Johns Hopkins University, Baltimore, U.S.A., on August 4th delivered the fifth William Mitchell Banks memorial lecture in the surgical theatre of the Medical School of the University. There was a numerous gathering of members of the medical profession and students. Mr. K. W. Monsarrat, the dean of the Medical Faculty, presided, and introduced the lecturer in appropriate terms. Professor Harvey Cushing chose as the subject of his address "Recent Observations on the Pathology and Surgical Treatment of Intracranial Tumours." He referred in particular to the results of palliative and radical operations performed during the previous ten months on 64 cases. He detailed first the symptomatology of the affection, and drew particular attention to the alterations in the fields of vision and of colour vision as among the earliest observable phenomena. In dealing with the morbid anatomy, he went into detail regarding the experimental work which had been done to demonstrate the functions of the pituitary body, and showed how over-action was associated with the phenomena termed acromegaly, and under-action with a characteristic form of obesity and sexual infantilism. He described a case of removal of the pituitary body from an acromegalic. In the third place he demonstrated by numerous lantern illustrations the methods of operative technique which were employed in his clinic. At the close of the lecture he said that he felt more deeply than he could express in words the full obligation which that occasion had imposed upon him—an obligation not only in view of the compliment of having been asked to deliver the William Mitchell Banks memorial lecture, but also in view of his feeling of responsibility to reward his hearers in a measure for their generous attendance. He was glad to lecture under the auspices of the University of Liverpool in honour of one who, as anatomist and surgeon, was a devoted Æsculapian in Liverpool, and whose life and works were well known in the daughter country over the sea.

New Hospital at Hoylake.

On July 15th the Lord Mayor of Liverpool undertook a journey to Hoylake and West Kirby for the purpose of fulfilling two interesting official engagements. At Hoylake his lordship, who was accompanied by the Lady Mayoress, was present during the laying of the foundation-stone of the new Hoylake and West Kirby Cottage Hospital by Sir Thomas Royden, Bart., the erection of which has become necessary owing to the inadequacy of the existing hospital at Hoylake for the needs of the district. The committee, at a cost of £1000, has secured what it considered to be the best available site—a plot of ground comprising about five-sixths of an acre situated at the corner of Birkenhead-road. The hospital will be above the road level and will have accommodation for 16 beds. The building will be placed angle-wise on

From

ng-hall

access

to the male and female wings. In both these wings will be two wards, one containing six beds and one two beds, both of which are to have exits to an open verandah. Sanitary blocks, which will be fitted with appliances of the most up-to-date type, are to be introduced close to the wards, but effectually isolated by short "cut-off" corridors. Favoured fortunately by sunny weather, the ceremony of laying the foundation-stone attracted a numerous attendance. The Lord Mayor explained that the new hospital was intended to serve as a memorial of the late Queen Victoria, and remarked that there could be no more fitting reminder of one who had been so closely associated with the nursing movement. The Lord Mayor and Lady Mayoress then paid a visit to the Children's Convalescent Home at West Kirby.

The New Medical Officer of Health of Chester.

Dr. J. R. Currie has been appointed medical officer of health of the city and county borough of Chester in succession to Dr. A. E. Thomas. Dr. Currie, who is a graduate in medicine of the University of Glasgow, was for some time senior assistant physician at Belvidere Fever Hospital. In 1907 he acted temporarily as medical officer of health of the counties of Stirling and Dumbarton in the absence of the medical officer of health, and towards the close of that year he was appointed assistant medical investigator under the Royal Commission on the Poor-laws. During the past year Dr. Currie has been assistant medical officer of the city of Chester.

Liverpool School of Tropical Medicine: Appointment for Dr. Anton Breinl.

Dr. Anton Breinl, of the Liverpool School of Tropical Medicine, has been appointed to the directorship of the newly founded School of Tropical Medicine in Western Australia. For many years Dr. Breinl was first assistant to Professor Chiari in Prague. He joined the Liverpool School of Tropical Medicine in 1904, having been appointed to the Johnston International Fellowship. He shortly afterwards was despatched to Manaos as a member of the school's yellow fever expedition. He and his colleague both contracted yellow fever during their investigations into the causes of that sickness, Dr. Breinl, after a very severe illness, being invalided home to England. Dr. Breinl is chiefly known for his researches on the parasite of sleeping sickness. He and Dr. Thomas first drew the attention of the profession to the value of atoxyl in the treatment of sleeping sickness. His departure from Liverpool will be very much regretted by his colleagues at the University.

August 10th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

West Wales Sanatorium.

THE delay which occurred in the establishment of the sanatorium for the counties of Carmarthen, Cardigan, and Pembroke possibly served a good purpose, for the experience of similar institutions has proved the desirability of making a careful selection of the cases taken for treatment. During the first six months of the present year nearly all of the 20 beds in the sanatorium have been occupied, and the executive committee is considering the advisability of fulfilling their original intention of erecting the necessary buildings for

were engaged in before they broke down in health, eight have changed their occupation, three though able to work were not obliged to, one has died, and three are following up in their own homes the treatment which they received in the sanatorium. The establishment of the institution met with a considerable amount of opposition, particularly from some members of the county councils, but the results more than justify the action of those who urged its necessity.

Dearth of Water in Swansea.

In October, 1907, there was completed by the Swansea corporation a large reservoir in the Cray Valley, Brecknockshire, with a storage capacity of 1,000,000,000 gallons, and it was confidently expected that the inhabitants of the town would have an ample water supply for many years to come. This anticipation received a rude shock during the last week of July when a large number of houses were placed upon a three hours' daily supply. It has transpired that the cause of this restriction was not the absence of water in the Cray reservoir, but the inadequacy of the conduits for delivering it into the service reservoirs, which themselves received independent supplies from adjacent streams. The low rainfall in the spring months had assisted in the depletion of these reservoirs. It is satisfactory to know that a second line of pipes is being rapidly laid between the Cray reservoir and the service reservoirs, and upon its completion there cannot possibly be a recurrence of the present unsatisfactory conditions.

Glamorgan Water Board.

The attempt of the Glamorgan county council to establish a water board for portions of the county, though successful before a committee of the House of Commons, has failed before the Lords Committee. The proposals of the council included, briefly, the purchase of existing water undertakings in certain districts and the supply of water in bulk to sanitary authorities who would themselves arrange for its distribution. There was opposition from those authorities who were already provided with adequate supplies and who objected to existing arrangements being interfered with. There appeared to be a strong impression, for which there was a certain amount of justification, that the scheme had been promoted in the interests mainly of the Rhondda valleys and of Pontypridd, where there is undoubtedly an inadequate water-supply. In announcing the decision of the committee that the Bill should not be allowed to proceed further the chairman, the Earl of Kintore, expressed the opinion that a comprehensive scheme of water-supply would one day be required for the county of Glamorgan. One result of the decision of the committee will no doubt be that the Pontypridd waterworks, which are situated at the head of the little Rhondda valley, will be purchased by the Rhondda and Pontypridd urban district councils. The former body already possesses extensive waterworks which are now in process of enlargement.

Lupus Patients in Swansea.

There has been placed in the hands of the Swansea Ladies' Samaritan Fund the sum of £1000, the interest of which is to be used for the purpose of providing special treatment for necessitous patients suffering from lupus. The donor of this sum is Miss Dillwyn who has for many years been a member of the Swansea board of guardians and who in 1903 was the means of providing, through an anonymous contributor, a convalescent home with accommodation for 20 patients. This institution was erected at a cost of over £10,000 on the hill-side overlooking Swansea Bay. Nearly 100 patients are sent to it each year from the Swansea Hospital.

Cost of Lunatics.

The average weekly cost of lunatics in county asylums in England and Wales in 1908 was 9*s.* 9½*d.* and in borough asylums 10*s.* 11¾*d.* The charge made to boards of guardians for lunatics in the Glamorgan County Asylum at Bridgend is now 9*s.* 11*d.* per head weekly. An increase of 2½*d.* per head has had to be made owing to the higher price of flour. At the Joint Counties Asylum at Carmarthen the weekly maintenance charge for the past year was 8*s.* 9*d.* per head, and the committee of the Brecon and Radnor Asylum at Talgarth have decided to raise the charge to boards of guardians from 11*s.* 6*d.* per head weekly to 12*s.* 6*d.* This increase is due in large measure to the removal of a large number of Cardiff patients who had been boarded at Talgarth during the building of the Cardiff institution. Their place will now be taken by patients belonging to Swansea, in which town a separate asylum is to be erected. The great cost entailed upon seaport towns in supporting alien lunatics was recently disclosed at Cardiff, where there are some 40 or 50 of this class of patients in the city asylum costing the corporation about £1500 yearly.

August 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Rickets in Glasgow Children.

AN inquiry into the physical condition of Glasgow children admitted to the City of Glasgow Fever Hospital, Belvidere, especially with a view to the incidence of rickets, has been held by Dr. A. S. M. Macgregor, assistant physician at Belvidere and has been published by the medical officer of health. The data tabulated included (*a*) the height of the children; (*b*) the size of the houses from which they came; (*c*) the position of the house in the tenement; and (*d*) the birthplace of the children and also of their parents. Of 1357 children between two and ten years of age rickets was observed among males to the extent of 31 per cent. and amongst females to 26·7 per cent. Of 329 children between six months and two years the incidence among the combined sexes was 42·5 per cent. The rachitic child was found to be of smaller stature than the non-rachitic child at all ages, and in a comparison of the mean heights made with those of the children from the one-, two-, and three-apartment houses, the male rachitic child is uniformly less in height than the non-rachitic child from the one-apartment house, the difference being more notable and amounting to 2 or 3 inches at ages from five to eight years. The female rachitic child was practically the same height (except at the age of six) as the non-rachitic child of the one-apartment house. This fact, along with the lesser incidence of rickets among females, would appear to indicate that females suffer from recognisable rickets less frequently, and show less retardation of growth, than the males. As regards housing accommodation, it is found that the same conditions that affect retardation of growth of the normal child operate powerfully on the susceptibility of the child to rickets. As regards the size of house, it appeared that among male children of the group between two and ten years of age from one-apartment houses 37·8 were rachitic, the figures for two- and three-apartment houses being 29·6 per cent and 12·2 per cent. respectively. For females the corresponding percentages were 34·5 per cent., 26 per cent., and 8·5 per cent. The corresponding figures for the age group between six months and two years are not so striking. It was also noted that in the case of children living in houses of three apartments the number of cases was only 21. It also appeared from Dr. Macgregor's inquiry that the situation of the house in the tenement was almost negligible as a factor in the causation of rickets. An analysis of the parentage of 1277 children was undertaken with a view to determining whether the susceptibility of the child to rickets depended to any extent on its own or its parents' birthplace. It would appear that the percentage incidence of rickets among Glasgow-born children exceeded by 14·4 that among children not born in Glasgow, and by 15·5 that among children who, with their parents, are foreign to Glasgow. It was also found that the mortality among rachitic children from measles or whooping-cough between the ages of six months and two years, was 32·8 per cent., as compared with 21·1 per cent in the case of non-rachitic children.

Death of Dr. A. R. Mackenzie, Fortrose.

The death of Dr. A. R. Mackenzie of Fortrose, which occurred very suddenly on August 4th, has removed a well-known figure in that part of the country. A native of Inverness, he graduated at the University of Glasgow and proceeded to the M.D. in 1851, when he also took the L.R.C.S. at Edinburgh, and thereafter became assistant to the late Dr. Tulloch, Fortrose, on whose death he succeeded to a practice which at that time embraced the whole of the Black Isle. Dr. Mackenzie only retired from practice a few years ago. On his attaining his jubilee as a practitioner he was entertained by the Faculty throughout the north. For many years he was an ardent Volunteer. He also held the positions of medical officer of health for the burgh and parochial medical officer for a very long period. He was a justice of the peace for

Ross and took a lively interest in the affairs of the town, serving for a number of years on the town council. He also occupied the position of chairman of the school board.

Medical Inspection in Fifeshire: Appointment of Medical Officers.

The Fife county joint committee on school medical inspection met recently and appointed four medical officers for the four districts of Fife. For the four male inspectorships there were 23 applicants, who at a previous meeting were reduced to a leet of eight, one of whom subsequently withdrew. The remaining seven appeared before the committee and were afterwards voted upon. Dr. Andrew A. McWhan, Rossville, Cambuslang; Dr. A. F. MacBean, Peterhead; Dr. A. Bremner, Montpelier Park, Edinburgh; and Dr. W. Arnott Dickson, Crosshill, Lochgelly, were appointed. It was left to the medical officer (Dr. T. F. Dewar) to assign the districts to which these gentlemen should be sent, the officer for the Cupar and St. Andrews district to reside in Cupar, for Kirkcaldy in Kirkcaldy, for West Fife and Kinross in Dunfermline, and for Leven either in Kirkcaldy or Leven.

Resignation of the Medical Officer of Health of Ceres.

At a recent meeting of the Ceres parish council notice of motion was given for the next meeting that steps should be taken to dismiss the medical officer of health of the parish, who was fined £25 and severely censured by Sheriff Armour at Cupar recently for entering the parochial shelter at Ceres in the early hours of the morning following Ceres Games and dragging some of the occupants out of bed into the street and assaulting them. The medical officer has now tendered his resignation, and the matter will be considered by the parish council at its next meeting.

Medical Inspection of Schools: Conference at Forres.

The secondary education committee of the county of Elgin was recently asked by the Education Department to formulate a scheme in connexion with the medical inspection of schools, and a conference has now been held at Forres with representatives of the secondary education committee of Nairn and with delegates from the school boards of the county of Elgin. The Forres, Elgin, and Edinkillie representatives said that their school boards did not wish to go into the scheme and were opposed to the medical inspection of schools. Nine-tenths of the children in that part of the country were healthy, and it seemed a ridiculous idea to appoint a medical inspector. After further discussion a delegate moved that they do not go in for the scheme. It was pointed out that this was irrelevant and he ultimately withdrew it. It was then moved that the medical inspection should be carried out either by the local medical practitioners or in conjunction with the county medical officer. It was also moved that the offices be not conjoined, but that an independent medical inspector be appointed, and this was eventually agreed to.

August 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Universities Act.

BY the 20th Section of the Irish Universities Act, 1908, it is enacted that the said Act shall come into operation on such a day, not being more than two years after the passing thereof, as the Lord Lieutenant may appoint. In accordance with this section of the Act, the Lord Lieutenant, in the *Dublin Gazette* of August 6th, appointed the 1st day of October, 1909, as the date on which the Royal University of Ireland is to be dissolved, and on which the two new universities—viz., the National University of Ireland and the Queen's University of Belfast—shall come into being.

The Tuberculosis Campaign.

The Dublin city council on August 10th adopted the compulsory (notification) clauses of the 1908 Tuberculosis Act. It is hoped in Belfast that the Belfast corporation will follow this example of the metropolis The discussion at the recent meeting showed that there was very general agreement among public health experts in favour of compulsory notification of tuberculosis. Meanwhile the war-chest of the tuberculosis campaign has been very materially enriched by Mr. Robert Collier, who has intimated to the Women's National Health Association of Ireland his intention of putting £1000 a year for five years at its disposal, in order that a tuberculosis dispensary may be founded as a memorial of his late father, Mr. P. F. Collier. The announcement of so munificent a gift for the purpose of relief of physical suffering is of special interest at a date when the Dublin corporation has just been discussing the desirability of cutting off its contributions to the upkeep of the city hospitals, with the possible exception of the grants to the Rotunda, Coombe, and Holles Street Maternity Hospitals, and the Cork Street Fever Hospital.

Holiday Home v. Sanatorium at Dalkey.

The discussion of the question of establishing a sanatorium for tuberculous patients at Dalkey has ended happily. Lady Aberdeen received a deputation from the Dalkey urban council last week, and replied to the objections which were raised in the petition which they presented against the project. In replying she expressed the opinion that their views had been formulated "under somewhat of a misconception, as there was not a definite idea of starting a sanatorium," and after some discussion on American precedents she assured her audience that they did not mean to send people in bad stages there—a concession to which Dr. W. McD. A. Wright, the medical officer of health of the Dalkey district, replied that "the only thing that would make the people of Dalkey happy would be to hear that the Irish Women's Health Association had decided not to take a place at all." Her Excellency responded to this expression of view by assuring the speaker that patients will not go there who are in any way consumptive. This reassuring promise was reiterated in a tactful little speech, and the deputation was allowed to take its leave with the full assurance that a recommendation would be conveyed to the executive of the Women's Health Association that if acquired the station would be used as a holiday home for tired workers; and, further, that in that case the institution would be managed by a joint committee on which the Women's National Health Association would invite the urban council to appoint representatives, including the medical officer of health of Dalkey.

Health of Belfast.

The report presented at the meeting of the Belfast city council on August 4th, for the period between June 20th and July 17th, showed that the death-rate from all causes was 13·6, while it was 1·2 from zymotic diseases and 4·1 from chest affections. During this period 70 cases of infectious disease have been notified—viz., 10 of enteric fever, 18 of scarlet fever, 13 of simple continued fever (probably enteric), 4 of puerperal fever, 11 of diphtheria, 13 of erysipelas, and 1 of cerebro-spinal meningitis. There were 35 deaths from zymotic disease, 58 from phthisis, 30 from pneumonia, and 36 from diseases of the respiratory organs (exclusive of pneumonia)—that is, a total of 124 from chest affections.

New Reservoir at Bangor.

On August 9th the water-supply from the new reservoir, which has been constructed at Ballysallagh, in the centre of a beautiful locality about four miles from Bangor, Co. Down, was formally turned on by the chairman of the urban council of Bangor. This new reservoir covers an area of about 30 acres and has a storage capacity of about 75,000,000 gallons, while the total catchment area is 11,000 acres. Taking the population of Bangor at 11,400 and estimating the rate of consumption as 30 gallons per head per day, this gives a water-supply sufficient for 200 days, whilst, in addition, the two reservoirs from which Bangor has up to the present drawn its supply have a storage capacity of 47,000,000 gallons.

The Water-supply of Newry.

At a meeting of the urban council of Newry held on August 9th the surveyor said that at present they were short in their daily supply of water by 200,000 gallons. A complaint was made as to the intermittent character of the supply. The matter is to be investigated.

August 10th.

[illegible] Robert [illegible] Library
[illegible] Medical College
1221

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Electrical Stimulation of the Muscles in the Treatment of Obesity.

SPEAKING at the Academy of Sciences on July 19th M. Bergonié recommended electrical stimulation of the muscles in many of the diseases due to disorders of metabolism. The best forms of electric current for the purpose were those characterised by sudden and regular variations between 40 and 100 times per second. The electrodes were wetted with hot water; they consisted of metallic plates padded with a thick, spongy material and covered almost the whole surface of the body, excluding the face, the front of the chest, the hands, and the feet. The sittings for the application of the current might last for an hour or more without fatiguing the patient, the electrical resistance of whose body might fall below 200 ohms. Under this treatment the respirations were increased and the internal temperature showed an upward tendency. The blood pressure did not rise during this electrically induced exercise; on the contrary, it fell just as in ordinary exercise, and the weight of the fat diminished very rapidly if the food-supply remained at the point of equilibrium existing before the treatment. There was also an improvement in the patient's bodily strength and power of resistance to fatigue.

The Serum Treatment of Rheumatism.

M. Rosenthal, who has been employing the serum treatment of rheumatism in collaboration with M. Thiroloix, described the results at a meeting of the Société de l'Internat held on July 22nd. He found the serum to be not only harmless but prophylactic and curative. Clinically it had a decided effect on generalised acute articular rheumatism but none upon the infectious pseudo-rheumatisms. Its action showed itself both in the affections of the joints, in the visceral complications, in the nervous complications (cerebral rheumatism and rheumatic chorea), and in the renal complications such as albuminuria; it might also reduce the pyrexia. Although sometimes capable of bringing the disease to an abrupt termination the serum generally required to be assisted by medicines, but it appeared in that case to act on the organism somewhat after the fashion of a dyer's mordant, so that patients recovered perfectly under very small doses of pyramidon or antipyrin (in the absence of salicylate of sodium) and after very sparing applications of salicylate of methyl. There was no incompatibility between the serum and salicylate of sodium; the serum of horses immunised against the anaerobic bacterium cultivated from the patient's blood (*hémobioculture*), salicylate of sodium, and colloidal injections were the three essential methods of treating the rheumatic crisis. To prevent relapses M. Rosenthal had prepared with M. Charazin Wetzel a vaccine on Sir A. E Wright's principle—that is to say, an emulsion of bacteria or a cultivation from freshly drawn blood in "physiological serum," and he thought that it was useful to give injections of small doses of this vaccine at long intervals in order to prevent recurrence of the attacks.

The Early Diagnosis of Calculus.

The necessity of the early diagnosis of vesical calculus was insisted on by Dr. Guépin at a meeting of the Academy of Medicine held on July 27th. He said that cases occurred in which very large uric acid calculi (weighing 100 grammes, 180 grammes, and upwards) were overlooked, and he quoted instances observed by himself both in hospital and in private practice. For the relief of such patients who had often been suffering for years it was necessary to perform the laborious operations of lithotomy or lithotrity, the results of which were not always quite satisfactory, whereas early diagnosis would have enabled the condition to be dealt with by a short operation offering a good prospect of success. Even when a vesical calculus was very large the symptoms might be very obscure, so that in all doubtful cases it was necessary to examine the bladder carefully; the best method of doing this was undoubtedly the one brought into notice by M. Reliquet, the well-known inventor of the instruments employed at the present time for crushing calculi. Proceeding in this way an operator of the requisite experience would recognise even the smallest calculi and appropriate treatment could then be undertaken.

Occlusion of the Intestine by an Intraperitoneal Band.

A case of occlusion of the intestine by an intraperitoneal band was described by M. Potherat at a meeting of the Surgical Society held on July 28th. The patient was a man, aged 21 years, who after completing his military service in Tunis returned to France, where he had an attack of malaria and afterwards suffered from lead poisoning attributable to his occupation as a plumber. He was then treated for abdominal symptoms which were regarded as due to appendicitis, and on an operation for the removal of his appendix being performed in 1907 it was found to be large and ecchymosed. In a few weeks he returned to his employment. In December, 1908, he presented symptoms of intestinal obstruction for which laparotomy was performed but no lesion was discovered. The stoppage of the bowels was relieved to some extent but afterwards became urgent and was accompanied by vomiting. Entering the Hôpital Broussais he was seen by M. Gilbert who was not disposed to accept the diagnosis of lead poisoning. After some days the fæces became dark-coloured and were blood-stained and flatus was passed with difficulty. The diagnosis of tuberculous enteritis was suggested but the examination of the fæces was negative. The symptoms of chronic obstruction at length became acute and were accompanied by fæcal vomiting; laparotomy was then performed with the result that some coils of intestine which were found to be adherent to the abdominal wall were separated without difficulty. Amid these coils there were a pouch from which serous fluid escaped, and underneath it there was a coil of intestine of an absolutely black colour with an adherent band encircling both it and the mesentery. This band had probably caused the congestion of the intestine and the subsequent hæmorrhage; the diameter of the intestine was also diminished. After division of the band the patient made an uneventful recovery.

The Reduction of Infantile Mortality in New York.

Mr. Robert Simon, who has for four months been conducting inquiries in New York with reference to the infantile mortality in that city, made a communication on the subject at a meeting of the Academy of Medicine held on July 20th. He said that during the period from 1898 to 1908 the infantile mortality in New York diminished by one-third—namely, from 214 per 1000 to 144 per 1000. This result was due in great part to the efforts of a private association for improving the condition of the lower classes and to the pressure which it exercised on the official sanitary services. Among the methods followed by the association, some of which might be found useful in France, Mr. Simon mentioned in the first place the arrangements that were made in summer time for the protection of young infants from the intensely hot atmosphere of urban dwellings by removing them and their mothers to open-air camps, seaside hospitals, and floating hospitals. These institutions were also of great service in teaching mothers the proper way of bringing up children. Another noteworthy point was the supply of milk guaranteed by a certificate issued under the supervision of the municipal laboratories. This certificate was only issued from day to day (*délivré chaque jour et révocable de même*) and required compliance with the following conditions: the milk must come from cows that have been tested with tuberculin; it must not contain more than 30,000 bacteria per cubic centimetre (in Paris there may be 5,000,000 bacteria per cubic centimetre at the end of 24 hours); it must be sent out in sealed bottles kept in ice; and it must be sold at the latest 36 hours after milking. These bottles must be filled and sealed at the farm and not in New York; they must also show the name of the farm and the day and hour of milking. Milk sold under this guarantee was, as might be expected, recommended for general use. Specially trained nurses made frequent visits to families in which there were very young infants, and they also kept regular observation upon pregnant women of the poorer class. Among infants born of poor parents and not brought under the notice of the visiting nurses until the day after birth the mortality was 17·1 per cent., but it fell to 4·7 per cent. when the mothers have received attention from the nurses for a period of a month or more previous to the termination of their pregnancy. A nurse visits 100 mothers annually and Mr. Simon considers that during that time she saves the lives of 12 children who in ordinary circumstances would have died.

August 10th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

What did the late Pope Die from?

"SENILE decay" was the accepted answer, and considering that he closed an eminently studious and strenuously active [illegible] death to have been tuberculosis. This disease, he maintained at a recent conference, may continue latent in the system, and then, at a given moment, "manifestarsi nel massimo vigore anche nell' età più tarda" (show itself in great force even at the most advanced age). Of this, he says, the late Pope was a typical example, succumbing as he did to "an acute attack of latent tuberculosis," when within little more than five years of being a centenarian.

The Italian Delegation at the Sixteenth International Congress of Medicine at Budapest.

At the conference above referred to Dr. Baccelli announced that he had just been honoured by Government with the task of organising a commission of delegates to represent Italy at the Sixteenth International Congress of Medicine which is to meet at Budapest on August 29th. On that commission, of which he is to be president, there will serve some Italian physicians whose studies have recently been directed to tuberculosis—a subject, moreover, to which the attention [illegible] "There is no [illegible]" (continued [illegible] 'tubercolo' [illegible] through that channel. Had it been possible by that route to attack it I would have done so when, having recourse to heroic remedies, I opened the veins. For syphilis—to say nothing of the cerebro-spinal bacteria—I have satisfied myself of the truly marvellous effects of the intravenous injection of the sublimate, by which I got 'on terms' with the 'granulazione.' Those who hold that tuberculosis is summed up in the bacillus of Koch are, I maintain, quite in error. I still adhere to the opinion formed years ago when Koch's discovery was made *publici juris*, and his 'tuberculin' was introduced into practice—namely, that the bacillus in question is only 'l'esponente microscopico dei tubercoli' (the microscopic exponent of tubercle), being by no means co-extensive with tuberculosis, still less with phthisis.

Padua: the Seat of the Italian Association for the Advancement of Science.

On the lines of its British counterpart, the third meeting of the Italian Association for the Advancement of Science will be held at the great Venetian seat of learning—the first having met at Parma in 1907 and the second at Florence. The sittings will extend from Sept. 22nd to 26th, and the programme, to which the finishing touches are now being put, will be one of exceptional interest. It is in nature-study, physics, and the medical sciences that Italy is giving most decisive proof of the resuscitation of her genius, and the organising committee of the association teems with names of distinction in all these studies—particularly the medical. I need only mention those of Golgi, Grassi, and Sanfelice to indicate the representative character of medicine. The two last named will take a prominent part under the Biological Section, while Golgi will give further illustrations of the discoveries with which he has already enriched neurology. Pigorini in palæontology and Grocco (following up last year's exposition by the Senator Colombo) will make still fresher contributions to the theme now on everybody's lips—that of aerial navigation. The opening address will be delivered by that master in academic oratory, Professor Luigi Luzzatti, who holds the chair of Constitutional Law in the University of Rome, his special thesis being the progress recently made by Italy in science and how that progress may [illegible] ted as she is with the early [illegible] anatomy, and in medicine—prominent among whom stands out for all time the name of William Harvey.

August 7th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Venomous Snakes in Austria.

IN the southern part of the empire there are several kinds of venomous snakes and the Government endeavours to prevent their increase by paying a small reward for each snake killed. In 1907 no fewer than 280,718 snakes were thus destroyed, 271,685 of them being venomous and mostly vipers. In 1908 the number fell to 273,500 snakes captured, of which 269,531 belonged to venomous kinds. In 1907 there were 206 persons bitten by these pests, with 18 fatal results. The increased knowledge of the habits of the snakes, together with the precautions that have been taken, lowered the number of persons bitten last year to 140, of whom six died. In accordance with a suggestion made by Professor Riehl, the inhabitants of the infested districts have been furnished with a small appliance, consisting of a knife for the immediate enlargement of the wound inflicted by a snake, and in the handle of this knife there is a supply of small tablets of permanganate of potassium, to be used immediately on the receipt of the wound, as it has been discovered that the venom may be destroyed by a concentrated solution of the above substance. This precaution has proved very satisfactory in the hands of the local peasantry.

Death of Professor von Vogl.

The Austrian medical profession has sustained a severe loss by the death of Professor Augustus von Vogl, Imperial councillor and emeritus professor of pharmacology and materia medica. The deceased was well known to many generations of medical men, as from 1874 to 1904 he both [illegible] the M.D. degree after the introduction of the modern curriculum for medical students in 1860. His industry and wide intelligence soon raised him above the level of his contemporaries and 10 years later he became professor of pharmacology. His chief merit was the introduction of modern methods of scientific research into his branch of medicine, making use of the comparatively new sciences of histology and microscopy for investigating the nature of the officinal plants; experimental pharmacology was also first cultivated by him in this country. Many foreigners came to Vienna for the purpose of attending his lectures in 1874 onwards. On account of his important contributions to the advancement of his specialty he was awarded the Hanbury medal, together with many other foreign distinctions, and he saw his text-book on materia medica translated into almost all the civilised languages. The principal published works of Professor von Vogl are the text-book above mentioned, the "*Anatomical Atlas of Pharmacological Plants*," and the "Methods of Detection of Adulteration of Food" He also founded the "Codex Alimentarius Austriacus," in which the chapters on flour, mushrooms, fruit, and condiments were all his own work. Professor von Vogl was elected rector magnificus of the University of Vienna in 1888, and ten years later he was appointed Oberste Sanitatsrath, or president of the chief board of health in Austria. In this position he endeavoured to introduce the principles of modern hygiene in all cases where the Government had a right to interfere, and many useful orders and regulations with respect to the sale of articles of food and other points of public health were due to his efforts. He was highly esteemed by his colleagues. His students found in him a strict but just and kindly examiner of whom they did not stand in awe, and when, a short time before vacating his chair, he received a title from the Emperor the distinction was deemed an honour to the profession. For the last four years he lived in retirement, having reached his seventieth year in 1904

Dental Surgeons and Dental Mechanics.

The conflict between the dental surgeons and the dental mechanics has lately assumed the character of a battle in which qualified and unqualified practitioners are struggling for supremacy and it therefore deserves the careful attention of the entire medical profession. In this country the practice of dentistry is restricted to the dental surgeons who must possess an M D. degree and must have also passed certain dental examinations. The progress of artificial dentistry, especially the art of crown-bridge work and regulation of the teeth, has brought into existence a large number of assistants to the dental surgeons, men without any medical degree or systematic instruction but possessing a good knowledge of the mechanical processes employed in artificial dentistry. Ever since dentistry became a lucrative occupation these men have tried to become independent of the surgeons and have encroached upon the domain of the latter until they undertook extraction of teeth, filling of cavities, and other surgical procedures without interference from the governmental authorities or medical corporations. Growing bold by degrees they have been endeavouring to have the practice of dentistry freed from the existing restrictions and thrown open to all who belong to the "guild" of dentists. The dental surgeons have naturally taken active steps in defence of their rights; and in the vicissitudes of this strife the governmental decisions have been partly for and partly against the medical men. At last a compromise was suggested by the unqualified dentists—namely, (1) that dentistry should in future be practised only by men holding the degree of M.D., and that no new dentists should be admitted to the "guild," so that this class would in course of time die out, leaving the field to the qualified men; and (2) that the dental mechanics should meanwhile be entitled to do all work necessary for the fitting of artificial teeth in the mouth. As this second condition meant nothing else but a tacit permission that surgical work might be done by men not having any hospital experience or medical diplomas the compromise was not accepted by the dental surgeons. Having obtained the help of some Members of Parliament the dental mechanics now began to demand a complete separation of the two branches of dental practice; the purely surgical one (filling of cavities and extraction of teeth) they offered to leave to the dental surgeons, whilst for themselves they asked for nothing else but the purely mechanical branch (artificial dentures, crowns, bridges, and regulation of teeth), together with permission to carry out the minor surgical procedures in the mouth necessary to fit in the dentures, such as the extraction of stumps, preparation of teeth for crowning, &c. This would mean, on the one hand, the absolute ruin of the dental surgeons and, on the other hand, the legalising of surgical practice on a special part of the human body by unqualified men. The whole profession has been roused and a meeting, arranged by all the medical corporations, has taken place in Vienna for the purpose of making a protest. All the speakers in this meeting pointed out the dangers threatening the public from the indiscriminate granting of permission to practise dentistry. As the dental mechanics have brought many influential men over to their side it is not impossible that they may be successful in their endeavours. Concerted opposition by the entire profession must therefore be organised, the public must be informed of the actual facts through the press, and there is still hope that victory may remain with the profession.

August 9th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

Shanghai Health Report for 1908.

THE carefully kept returns of Shanghai are valuable as being indicative—to a good extent as far as Europeans are concerned—of the health conditions of other treaty ports in China (i.e., ports open to foreign trade). The report just issued declares the public health during 1908 as satisfactory, with no exceptional incidence of any preventable disease. The group of bowel diseases—typhoid fever, cholera, dysentery, sprue, &c.—to which the non-Asiatic resident in the Far East is peculiarly susceptible, and which may be avoided by the use of sterilised food, have been less prevalent. The degree of prevalence of this group of maladies is perhaps the best index of sanitary education as locally acquired. Tuberculosis is still rife, and because of its commonness there is a tendency to consider it a necessary evil. Over 1000 Chinese die from this disease yearly in Shanghai, and this enormous death-rate will continue, irrespective of climate, as long as there is no legislation to prevent indiscriminate spitting and overcrowding with deficient air space. Small-pox of mild type was prevalent to a small extent during the first quarter of the year. The conscientious objector to vaccination has no troubles in China, the powers that be leaving this matter entirely to the people to take it or leave it, as they may choose. It is therefore noteworthy that during this year 4649 vaccinations have been done at the Health Office, as compared with 465, 380, 520, and 1418 of previous years, and it seems probable the Chinese will take up vaccination widely. As Dr. A. Stanley says, "small-pox should soon be looked upon as a mediæval scourge, only surviving in countries imperfectly civilised." Only two deaths were certified as due to Malta fever, and although 37 specimens were examined in the laboratory, in none was the diagnosis confirmed. A few cases of cholera were notified during the summer, but again the diagnoses were not confirmed in the laboratory. Following the dictum of "No rats, no plague" as a working basis, most energetic methods of rat destruction have been carried out, but it has been found that these measures are ineffectual in reducing the rat population—their reproduction easily keeping pace with their destruction—unless combined with active steps to make houses as rat-proof and therefore as plague-proof as possible. Solid basements, removal of stair linings, hollow ceilings, and hollow partitions, are required of house owners in the notices which are served to them. No doubt these and other similar activities on the part of the public health department have not been without good effect. At the same time the immunity of Shanghai to plague is a most remarkable fact, when one considers that, since its introduction to the Far East in 1894, plague has been epidemic in North, Mid, and South China, and until last year the only restrictions imposed by the port health authority on ships arriving in Shanghai were directed against human cases and not against rats, now recognised as the chief disseminators of plague between port and port. This problem is the more difficult to solve when one considers, again to quote Dr. Stanley, that "Shanghai is a rat-infested community, that there is no legislation whatever against overcrowding, that isolation of infectious diseases cannot be enforced, that the great mass of the population is an alien one, mostly ignorant of the rudiments of sanitation, and that there is an almost entire absence among the Chinese of the responsibilities of citizenship as understood in communities educated according to modern standards." A constant unrestricted shipping trade is kept up with Bombay, Hong-Kong, and other endemic centres; the temperature is favourable and, as noted in previous letters, plague was found to be existent among the rats, though in a small proportion; it is therefore seen that here are all the elements favourable to an outbreak. One is tempted to doubt the generally accepted theory of the rat and its fleas being the sole means of epidemic spread and to look for other causes. At Shanghai there is efficient port health examination, and up to the present no cases of human plague have been allowed to land. The spread from man to man is thus interfered with so far as pneumonic plague is concerned. Any increase in the number of sick or dead rats would soon be detected by the sanitary staff. There, however, remains a break in the chain of circumstances necessary for human infection which has not been satisfactorily explained as yet.

The Murder of Dr. C. Lalcaca.

Dr. Lalcaca was one of the best known and most prominent medical men in Shanghai, where he had practised for 23 years. You are certain to have given particulars of his career.[1] In Shanghai he was one of the leaders of the local Parsee community. He was very popular socially and was one of the keenest members of the Shanghai Volunteer Corps, in which he held the rank of surgeon-major and principal medical officer of the corps. All matters affecting the Parsees possessed warm interest for Dr. Lalcaca, and it was always felt that although he came most frequently into association with people of other foreign communities his own people were never forgotten and ever retained a place in his affection. Not only residents in Shanghai, but people of the Far East generally, from Japan to India, are mourning the tragic termination to an active, useful, and unselfish life.

The Far Eastern Association of Tropical Medicine.

This society has been formed as the outcome of a report made by a committee appointed by the Philippine Islands

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[1] THE LANCET, July 10th, 1909, p. 120.

Medical Association. It is hoped thus to unite into one compact organisation the medical profession in the Far East. In addition to promoting the science and art of tropical medicine it, among other objects, hopes to advance and elevate the standard of medical education among Asiatics. The first biennial meeting will be held in March, 1910, at Bagnio, Benguet, the summer capital of the Philippines, and a programme in outline is now being circulated calling for papers on protozoology, helminthology, dysentery, beri-beri, cholera, plague, leprosy, &c. There will be a day specially devoted to tuberculosis. A visit to the Philippines, with the opportunity for inspection of the progressive methods of the American Naval and Military Services and of meeting American medical men, should be a strong incentive to make this first meeting a success. Dr. Francis W. Clark, medical officer of health of Hong-Kong, is the secretary-treasurer for China.

July 10th.

Obituary.

ARTHUR FOXWELL, M.D. CAMB., F.R.C.P. LOND.,

PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM; PROFESSOR OF THERAPEUTICS, UNIVERSITY OF BIRMINGHAM.

BY the death of Dr. Arthur Foxwell, senior physician to the Queen's Hospital, Birmingham, under exceptionally sudden and sad circumstances, the medical profession has suffered a great loss. Dr. Foxwell was riding a bicycle near Warwick on the evening of Sunday, August 1st. While descending a hill a dog ran out suddenly into the front wheel of the machine. Dr. Foxwell was thrown violently over the handle-bar, was picked up insensible, and was removed at once to the Warneford Hospital, Leamington. It was found that he had sustained severe injuries to the head and spine from which he never regained consciousness and from which he died on the early morning of Wednesday, the 4th.

Dr. Foxwell was born at Shepton Mallet on July 13th, 1853; he was the third son of the late Mr. Thomas Somerton Foxwell of Weston-super-Mare. He received his early education at Queen's College, Taunton, afterwards at St. [illegible] College, Cambridge, and subsequently at St. Thomas's [illegible] Lond. with honours in [illegible] in 1877, also with honours in natural science, in 1883 the degree of M.B. (first class in medicine), and in 1891 the degrees of M.A. and M.D. He became a Fellow of the Royal College of Physicians of London in 1892, and received the degree of M.Sc. of Birmingham on his appointment as Professor of Therapeutics in that University in 1901. After holding the posts of house physician to St Thomas's Hospital, clinical assistant to the Brompton Hospital, and medical officer to the Children's Hospital, Pendlebury, he was elected to the office of pathologist to the General Hospital, Birmingham. From this he was appointed assistant physician during the years 1885 to 1889, when he was elected to the staff of the Queen's Hospital, which post he held to the time of his death. He was Bradshawe lecturer of the Royal College of Physicians of London in 1899, gave the Ingleby lectures in Birmingham in 1892, was examiner in medicine at the University of Cambridge, and also held a number of other pro- [illegible] Foxwell filled a place in the [illegible] that was due wholly to his [illegible] head and heart, and because [illegible] ill that place which he has left so suddenly in the fulness of his powers, and when his wide experience was yielding a rich return for years of patient and accurate work.

It is not an easy task to single out for remark any quality in one whose whole personality was strongly marked. But whatever the circumstances, whether as the hospital physician, the teacher, the doctor, or the man in his own home, the feature which attracted above all others was his high ideal of life and work. Work was to be done for its own sake, and work well done never failed to meet with generous appreciation and honour from him He himself was a worker of the first order, with a gift of keen criticism. No new idea or f [illegible] was accepted without a t[illegible] imself, for so deep was hi[illegible] detected any flaw in argument and any misinterpretation of facts. His clinical teaching, therefore, was of a high standard, more adapted perhaps for the senior student than the junior, in that his extensive knowledge of pathology and higher medicine took him so far ahead that at times he seemed to forget that it was not given to all his students to follow where he led. Dr. Foxwell appeared at his best and often in his brightest moods at consultations of the hospital staff; then he gave free rein to his faculty for drawing inferences from observed facts. It was on these occasions that his power of criticism was keenest, and when it happened that the case down for discussion was his own, his summing up of evidence for a diagnosis was a lesson in clinical medicine. A similar accuracy in the observation of facts and care in drawing conclusions characterised all his writings, and none could speak or write with greater ease or grace, for in all his teaching and writing he was fastidious. His contributions to medical literature are select. His investigations into the causation of functional defects of the heart, the pericardium, vascular diseases, and lesions of the liver are well known and have set a standard of clinical research in Birmingham among his colleagues. He published the following works: In 1895, "Essays in Heart and Lung Disease"; in 1896, "The Enlarged Cirrhotic Liver"; in 1897, "The Spas of Mid-Wales"; in 1899, "The Causation of Functional Heart Murmurs," the Bradshawe Lecture which appeared in THE LANCET, as did his address on "Inhalation" in 1907, and on "The Clinical Examination of the Urine with Especial Reference to the Estimation of Urea" in 1908. He published a number of papers in other medical journals. He strongly believed in the climatic treatment of disease, and to this subject he devoted a great deal of attention. He had travelled much to visit the health resorts of Switzerland, France, and Germany, and his lectures on climatology were largely the result of personal knowledge of the places where patients are usually sent

Dr. Foxwell held strong views as to the duties of members of the staff in addition to their clinical work in the hospital. He took a great interest in the building of the new medical block at Queen's Hospital and his speech at the opening ceremony in 1908 is well remembered by those who were present for its aptness and grace of diction. To Dr. Foxwell was due the construction of a roof ward in the medical block, for so fully did he realise the advantages to be gained by treating acute diseases of many kinds in the open air that his strong advocacy prevailed and an important and new feature was introduced into the routine of hospital treatment. Already results have shown the wisdom of his advice. In point of fact, the general design and arrangement of the medical block are due to this wise physician's versatility, as the plans were largely drafted on his suggestions.

Dr. Foxwell's share in public work did not extend much beyond Queen's Hospital. He was not physically strong, and although he took a constant interest, and held office, in the medical societies, he felt constrained to spare his energy. For this reason he did not appear in municipal life, nor even much in society, though he held strong opinions on, and watched with interest, all that concerned the welfare of the community. As in his work, so in his private life his ideal was high and his interests many and varied. He had a great love for his garden, and his beautiful home—Northfield Grange—was typical of his refined tastes. Those who were privileged to see him there were always conscious of a peculiar influence, almost a fascination, he had over others, due to a wide culture. He talked with an ease on literature, art, and nature that could only come of acquaintance grounded on thoughtful appreciation of those things which make for fulness of life. Like many of high intellectual order, he had several sides to his character—the cold, clear, and logical, and the contemplative, almost mystical. In movements of expansiveness—for in many ways he was a reserved man—he would talk with keen delight of the simple everyday joys of life, and pass thence to speak of what he called the "dreamy West Country," from which he came. His friends knew that he was loyal and true; that his advice was at their service in all matters where help was needed. It has already been suggested to found a prize or medal in his memory, to be given for proficiency in clinical research or some branch of medicine in which he was particularly interested.

Dr. Foxwell married in 1880 the widow of the late [illegible] Robert Pollack, and daughter of [illegible] Mr. [illegible] much needed improvement; and Mrs. Bedford Fenwick called attention to the need of reform in our own naval nursing service, which had not profited, like the army nursing, from the South African war. The last day's conference was concerned with health and mission nursing in foreign fields.

THE ROYAL UNITED HOSPITAL, BATH.—A new out-patient department, an isolation house, and a home for the accommodation of the nursing staff have been recently added to the Royal United Hospital, Bath.

Dr. Hansen of Bergen and Dr. Morisani of Naplés have been elected Foreign Associates of the Paris Academy of Medicine.

A DEVONSHIRE CENTENARIAN.—Mrs. Johanna Dillon of Inwardleigh, who celebrated the 103rd anniversary of her birthday on June 26th, died on July 31st. She was born at Coleridge, Devon, and had always resided in her native county.

EAST CORNWALL HOSPITAL, BODMIN.—The committee has decided to erect a new hospital in Rhind-street, Bodmin. Plans have been approved and the new building will contain male and female wards to accommodate six beds each, two private wards, operating theatre, out-patient department, consisting of consulting-room, dispensary, &c., accommodation for the matron and medical staff, &c.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Anæsthetics Bill.

SIX notices of motion to reject Mr. COOPER'S Anæsthetics Bill now stand on the order paper of the House of Commons. The Members who have brought forward those notices are Mr. SNOWDEN, Mr. WILES, Mr. HARWOOD, Mr. JOYNSON-HICKS, Mr. HOGAN, and Mr. KENDAL O'BRIEN. With opposition in front of it, there is no chance of further progress being made with the Bill at this period of the session.

Ambulances (Metropolis) Bill.

Mr. PEEL'S Ambulances (Metropolis) Bill, which is now published, provides that the ambulance service in the metropolis should be maintained by the Metropolitan Asylums Board. This carries out the recommendation of the majority of the recent Departmental Committee in regard to the authority which is to administer an ambulance service in London. Two members of the committee favoured this plan, but the third, Sir WILLIAM COLLINS, M P., desired that the work should be undertaken under the auspices of the County Council. Soon after the issue of the report of the Departmental Committee he introduced into the House of Commons his Metropolitan Ambulances Bill, making the County Council the administrative authority. A second reading has been obtained for it, and it is now awaiting consideration at the hands of a Parliamentary Committee. The outlines of this situation are set out in a memorandum to Mr. PEEL'S Bill, and it emphasises the fact that his measure follows the recommendation of the majority of the Departmental Committee. Besides proposing the Metropolitan Asylums Board as the authority to establish the ambulance service, it also provides, in accordance with the report of the committee, that the Commissioner of Police of the metropolis should be empowered to enter into agreements in connexion with such a service (1) with the Metropolitan Asylums Board; and (2) with the board of guardians of the poor of any parish or union without the county of London but within the metropolitan police district as to the use of ambulances for street cases in that district. It is also stated in the Memorandum that on June 3rd, 1909, the Secretary of State for the Home Department asked to be furnished with the observations of the Metropolitan Asylums Board on the report of the departmental committee, and on June 19th, 1909, the Board passed the following resolution:—

"That the Secretary of State for the Home Department be informed, in reply to his letter of the 3rd June, 1909, that the managers entirely concur in the evidence given by the clerk to the Board before the Departmental Committee on the Ambulance Service in the metropolis; and that in the event of the necessary authority being conferred on the managers by Parliament, they are convinced that they could speedily and economically inaugurate an efficient service of rapid ambulances for 'street cases' for the administrative county of London, and, if considered desirable, for the outlying portions of the Metropolitan Police District."

Lord ROBERT CECIL, Mr. CROOKS, Mr. HENRY GOOCH, and Mr. HAY were associated with Mr. PEEL in bringing forward the Bill.

Local Education Authorities (Medical Treatment) Bill.

When the House of Lords on Wednesday, August 4th, considered the Local Education Authorities (Medical Treatment) Bill in committee Lord BELPER expressed a fear that one of its clauses, if unaltered, would introduce an optional element into the medical inspection of school children under the Act of 1907. The Earl of CREWE promised to investigate the matter before the next stage of the Bill, which was then allowed to pass through committee without amendment.

Milk Legislation and Tuberculous Cows.

An obstacle to the rapid passage of the Bills dealing with milk-supply and dairies in England and Scotland was disclosed in a short debate in the House of Lords on Wednesday, August 4th. For their full effect these measures are, in great degree, bound up with the Tuberculosis Order recently issued by the Board of Agriculture. Under it compensation is proposed to be given for cattle slaughtered on account of tuberculosis. On August 4th the Government were pressed to give an estimate of the probable cost of compensation so far as Scotland was concerned. Lord PENTLAND, the Secretary for Scotland, replied that at present the Board of Agriculture had no reliable statistics on which to form an estimate, but the President of the Board was engaged in an attempt to arrive at a computation of the number of cattle which would fall to be dealt with under the tuberculosis order. He further demurred at the suggestion that the progress of legislation should be hung up pending the result of the inquiries of the Board of Agriculture. This evidently was not the view of several other noble lords. They urged the advisability of waiting for the statistics to be provided by the Board of Agriculture before giving the Bill a third reading. Some objection was also taken to the course adopted by the Government of dealing with England and Scotland in separate Bills. The result of the discussion was that the Earl of CREWE, on behalf of the Government, with unconcealed reluctance, agreed to defer the motion for the third reading of the Milk and Dairies (Scotland) Bill. Some of the considerations advanced in favour of the delay of this measure would apply with equal force to the case of the English Bill. The session is now far advanced, and as the main attention of Parliament will be devoted to the controversies involved in the Finance Bill, the prospect of the Government's Milk Bills reaching the Statute Book this year is becoming less and less assured as the weeks pass.

The Parliamentary Session.

For a fortnight there has been a lull in the proceedings of the House of Commons. Many honourable Members have been taking a holiday, but with the reappearance of the Finance Bill this week, as the principal order of the day, the strenuous life of Parliament has recommenced. This is the season of the year when Governments are usually trying to wind up the session with expedition. However, this year it would seem that the hardest weeks have yet to come. There is a prospect of many prolonged sittings extending into the morning hours, and bringing with them a great strain on the physical resources of Members who remain in attendance at Westminster.

The Report of the Whisky Commission.

In the Final Report of the Royal Commission on Whisky and other Potable Spirits the Commissioners are unable to recommend that the use of the word "whisky" should be restricted to spirit manufactured by the pot-still process, stating that they have received no evidence to show that the form of still has any necessary relation to the wholesomeness of the spirit produced. They have framed a definition of "whisky" to which the product of both the pot and patent still processes may conform. According to it whisky is a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt. The Commission devoted a considerable portion of its inquiries to brandy, rum, geneva, gin, and liqueurs. One of the conclusions come to is that the term "brandy" is applicable to a potable spirit manufactured from fermented grape-juice and from no other materials. However, it is added that the compounded spirit recognised by the name of "British brandy" is entitled still to be sold under that designation. The report is a unanimous one.

HOUSE OF COMMONS.

THURSDAY, AUGUST 5TH.

Civil Surgeons in India.

Mr. J. MACVEAGH asked the Under Secretary of State for India whether he was aware that the civil surgeons in India were usually medical men belonging to the Indian Medical Service, and that their duties were very light and left them ample time for private practice; whether the same work was done in the native states by medical men who did not belong to the Indian Medical Service at a much less cost and to the entire satisfaction of the Government and the public; and whether he could say when he woul[illegible] proposed scheme for the reform of the medical service of [illegible] ELIBANK wrote in reply: The hon. Member is [illegible] the civil surgeons in India are usually officers [illegible] Service. The Secretary of State has no detailed information as to the amount of time which they are able to spare from their official duties for private practice, nor is anything known as to the work of medical practitioners in native States. The Secretary of State is still in communication with the Government of India in regard to the best means of promoting the growth of an independent medical profession in India.

Plague in India

The MA[illegible] State for India, in the course of [illegible] aid that with regard to plague, it [illegible] last two years was encouraging [illegible] it was hoped that the worst had been seen of the disease In each of the two preceding years the mortality had exceeded 1 000,000, but in 1906 it dropped to 357,000, and keen was the [illegible] following year [illegible] ortality of up- [illegible] its strength [illegible] that of the [illegible] onths of this [illegible] s the mortality was always [illegible]

[illegible] should be combated and were show [illegible] coöperate with the Government in [illegible] scientific aspect. The Government [illegible] responsibilities and attached so mu [illegible] knowledge that simple instruction o [illegible] schools of the land [illegible] leman expressed apprecia [illegible], Dr Lalcaca, who gave his [illegible] Sir Curzon Wyllie.

TUESDAY, AUGUST 10TH.

The Heroism of Dr Lalcaca

Mr KEIR HARDIE asked the Under Secretary of State for India [illegible] action, and I can only repeat that it shares in the fullest degree the [illegible]

Reported Cholera at Calcutta.

Mr. REES asked the Under Secretary of State for India whether the Government of Bengal had instituted inquiries into the ten deaths reported of cholera in the Presidency European Hospital, Calcutta, whether it had determined whether the deaths were due to cholera, [illegible]

WEDNESDAY, AUGUST 11TH.

Royal Army Medical Corps

Mr. ASHLEY asked the Secretary of State for War what was the [illegible]

BOOKS, ETC., RECEIVED.

APPLETON AND CO, London.

The Principles and Practice of Medicine By William Osler, M D, F R S, F R C P Lond, Regius Professor of Medicine, Oxford University. Seventh edition, thoroughly revised. Price, cloth, 21*s* net.

ASSELIN ET HOUZEAU, Paris.

Les Maladies des Enfants [illegible] de MM Babonneix, Bige [illegible] Lesne, G Leven, Louis [illegible] L Tixier, Vitry, Roger V [illegible]

BAILLIÈRE, TINDALL, AND COX, London

A Manual for Students of Massage By Mary Anna Ellison. Third [illegible] Gardner, M R C S, L R C P [illegible] rugs By C G Moor, M A [illegible] tridge, F I C Third edition [illegible] By R Bruce Ferguson, M A, &c Fourth edition Price, [illegible]

BALE (JOHN), SONS AND DANIELSSON, LIMITED, London.

Blackwater Fever (Bilious Malignant Tertian Ague) By A. G Newell, M D Glasg, C M, L.M, D P.H Cantab Price 5*s* net.

BELL, GEORGE, AND SONS, London

An Introduction to the Study of the Comparative Anatomy of Animals By Gilbert C. Bourne, M A., D Sc, F.L.S, F Z S. Vol I Animal Organisation The Protozoa and Cœlenterata. Second edition, revised. Price 6*s*.

BOOTHROYD, ELIOT, London

Low's Handbook to the Charities of London 1909 *Price* 1*s*

CHURCHILL, J. AND A, London

Report on Plague in the Gold Coast in 1908. By W. J Simpson, M D, C M G, &c Price 2*s* net.

CLARENDON PRESS, Oxford

The Last Days of Charles II By Raymond Crawfurd, M A, M D Oxon, F.R C P Price 5*s* net.

FISCHER, GUSTAV, Jena

H [illegible] Heraus- [illegible] g. Vierte [illegible] 50

Le [illegible] Wullstein [illegible] ng Price M 13 50.

Klinische Spektroskopie Von Otto Schumm, Vorsteher des Chemischen Laboratoriums Price M 6.

E [illegible]

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

[illegible] System of Medicine. Edited [illegible] isted by Thomas McCrae, [illegible] rice 30*s*. net per volume, or [illegible] d in Health and Disease. Price 12*s* 6*d*. net.

HEATH, D. C, AND CO, Boston, U S A.

Diseases of the Bones and Joints. Clinical Studies. By Joel E. Goldthwait, M D, Charles F. Painter, M D, and Robert B. Osgood, M D Price not stated

HERRICK BOOK AND STATIONERY COMPANY, THE, Denver, Colorado.

The Ophthalmic Year Book Volume VI By Edward Jackson, A M, M.D., George E de Schweinitz, A M, M D, and Theodore B. Schneideman, A M, M D. Price not stated

HILL, WALTER, London

The Holidays, 1909 Where to Stay and What to See Price 1*s*

HIRSCHWALD, AUGUST, Berlin

Die erste ärztliche Hülfe bei Unfallverletzten Beiträge zur Unfallheilkunde Von A Köhler, Berlin *Price* M 1

Ueber die Lage des Wurmfortsatzes Von Rhaban Liertz Price M 4

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig

Das Altern, seine Ursachen und seine Behandlung durch hygienische und therapeutische Massnahmen Ein Handbuch für eine Rationelle Lebensweise. Von Dr. A. Lorand. Price, paper, M 5, bound, M 6

LANE, JOHN, London (JOHN LANE COMPANY, New York)

Minor Gynæcology By V. Zachary Cope, B.A, M.D, B S. Lond. Price 5*s* net

LEHMANN, J F, Munchen

Jahresbericht über die Königliche Psychiatrische Klinik in Munchen fur 1906 und 1907 Price M.3 60

LEWIS, H K, London

Otitic Cerebellar Abscess By Heinrich Neumann. Translated by Richard Lake, F R C S Price 4*s* net

LONGMANS, GREEN, AND CO, London

Elementary Chemistry By Hollis Godfrey Price 4*s* 6*d* net

MACLEHOSE, JAMES, AND SONS, Glasgow.

Cl [illegible] By James [illegible] revised and [illegible]

MILLS AND BOON, LIMITED, London

The Last Lord Avanley By Gerald Maxwell. Price 6*s*.

REBMAN, LIMITED, London

[illegible] Scientific and Biological [illegible] ducted by the Author [illegible] Silver Belle" By [illegible], F L S, F Z S. Price 10*s*. 6*d* net

A Text-book of Mental Diseases By Eugenio Tanzi. Authorised Translation from the Italian by W. Ford Robertson M D, C M, and T. C Mackenzie, M D, F R C P Edin Price 24*s* net

The Maniac A Realistic Study of Madness from the Maniac's Point of View Price 6*s*

Surgical Diseases of Children A Modern Treatise on Pediatric Surgery. By Samuel W Kelley, M D Price 21*s* net.

SANITARY PUBLISHING CO, LIMITED, London.

The Practical Management of Sewage Disposal Works A Handbook for Those in Charge By W C Easdale, M S E, M.R San I. Price 2*s* net.

[illegible] Philadelphia and London.

[illegible] ward A Kelly and Thomas S. [illegible] Text book for First Year Pupil [illegible] Price 8*s* net [illegible] Friedenwald, M.D, and John [illegible] revised and enlarged. Price 6*s* 6*d* net.

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhrah, M.D. Price, cloth, 18*s.* net.

Obstetrics for Nurses. By Joseph B. De Lee, A.M., M.D. Third edition, thoroughly revised and enlarged. Price 12*s.* net.

SPRINGER, JULIUS, Berlin.

Myeloische Metaplasie und fötale Blutbildung und deren Histogenese. Von Dr. med. Heinrich Fischer. Price M.4.

STEVENS AND SONS, LIMITED, London.

The Law of Compensation for Industrial Diseases. By Edward Thornton Hill Lawes, M.A., B.C.L. Price 7*s.* 6*d.*

THIEME, GEORG, Leipzig.

Gulhane-Festschrift zum 10 jahrigen Bestehen des Kaiserlich-Osmanischen Lehrkrankenhauses Gülhane. Von Prof. Dr. Wieting Pascha, unter Mitarbeit des Lehrkörpers. Price M.12.

UNIVERSITY PRESS, Manchester. (SHERRATT AND HUGHES, London.)

Semmelweis, His Life and His Doctrine. A Chapter in the History of Medicine. By Sir William J. Sinclair, M.A., M.D. Price 7*s.* 6*d.* net.

Modern Problems in Psychiatry. By Ernesto Lugaro. Translated by David Orr, M.D., and R. G. Rows, M.D. With a Foreword by T. S. Clouston, M.D., LL.D. Price 7*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

HILL, WALTER JAMES, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health of Clevedon, Somerset.

IRELAND, ARCHIBALD EDWARD, M.R.C.S., L.R.C.P. Lond., D.P.H. Oxon., has been appointed Medical Officer of Health and Government Bacteriologist, Suva, Fiji.

LLOYD, BRIMLEY R., M.B., B.S. Lond., D.P.H., has been appointed Medical Inspector of Schools at Sheffield.

NASH, E. H. T., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health of Wimbledon.

RUSSELL, R. F., M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ollaberry District of the county of Zetland.

TRIMBLE, ROBERT, M.D. Glasg., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 4, and to be attached more particularly to Preston, Garstang, and Chorley County Courts.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM UNIVERSITY (FACULTY OF MEDICINE).—Professorship of Anatomy. Stipend £800 per annum.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL, BRENTRY CERTIFIED INEBRIATE REFORMATORY, Westbury-on-Trym.—Superintendent and Medical Officer. Salary £400 per annum, with board and residence.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CAMBRIDGE UNIVERSITY, PATHOLOGICAL LABORATORY.—John Lucas Walker Studentship. Value £200.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £70 per annum, with board and lodging.

CAPETOWN, SOMERSET HOSPITAL.—Assistant Surgeon. Salary £200 per annum, with rations and quarters.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Honorary Ophthalmic Surgeon.

COLCHESTER, ESSEX COUNTY HOSPITAL.—Honorary Dental Surgeon.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

EBBW VALE STEEL, IRON, AND COAL CO., LIMITED.—Medical Officer for the Inspection of Injured Workmen. Salary £250 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £60 per annum, with board and washing.

EDINBURGH DISTRICT ASYLUM, Bangour Village.—Third Assistant Medical Officer and Pathologist (female). Salary £120 per annum, with board, apartments, and laundry.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Two Clinical Assistants in the Ear and Throat Department.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Two Clinical Assistants in the Out-patient Department for four months. Salary at rate of £100 per annum.

JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly Hill, near *Birmingham.—Resident Medical and Surgical Officer Salary £150* per annum, with board, residence, and washing.

LANARK, COUNTY OF.—Two Medical Officers for the Examination and Supervision of School Children. Salary £350 per annum, with travelling expenses.

LEEDS INFECTIOUS DISEASES HOSPITALS.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

LEIGH, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons. Salary at rate of £60 per annum, with board and residence.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer. Salary £120 per annum, with board and residence. Also Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board and residence.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

MILE END OLD TOWN INFIRMARY AND WORKHOUSE, Bancroft-road, E.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer at Hampstead, also Assistant Resident Medical Officer at Northwood. Salary in each case £50 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NORWICH, HEIGHAM HALL PRIVATE ASYLUM.—Assistant Medical Officer. Salary £120 per annum, with all found.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £160 per annum, with apartments, attendance, light, and fuel.

PUBLIC DISPENSARY, 122, Drury-lane, W.C.—Resident Medical Officer. Salary £105 per annum, with apartments

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SOUTHWARK INFIRMARY, East Dulwich-grove, S.E.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

STOKE-UPON-TRENT WORKHOUSE.—Resident Medical Officer. Salary £175 per annum, with board, washing, and apartments.

SUNDERLAND AND DURHAM COUNTY EYE INFIRMARY, Sunderland.—House Surgeon, unmarried. Salary £210 per annum.

SUNDERLAND, MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician, also House Surgeon for six months. Board, lodging, and laundry provided.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary at rate of £80 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Llangefni, in the county of Anglesey; at Saundersfoot, in the county of Pembroke; and at Creetown, in the county of Kirkcudbright.

Births, Marriages, and Deaths.

BIRTHS.

WACHER.—On August 7th, at Chalkwell-gardens, Leigh-on Sea, the wife of Geoffrey Wacher, L.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

SILAS—STANNARD.—On July 31st, at Christ Church, Mayfair, Walter B. Silas, M.R.C.S., L.R.C.P., of Southgate-road, N., to Lilian, daughter of Henry Stannard, R.B.A., of Bedford.

GOLDEN WEDDING.

JONES—MORRIS.—On August 11 [illegible] 's Church Sydenham, by the Rev. C [illegible] Jones, M.D. Lond., F.R.C.S., of St. [illegible] rator of the Pathological Museum, St. Thomas's Hospital, London, eighth son of the late Thomas Jones, Walworth, Surrey, to Mary Myrie, elder daughter of Samuel Morris, Sherwood Lodge, Sydenham, of the firm of Messrs. Bevington and Morris, 28, Cannon-street, London, E.C.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HARMFUL EFFECTS OF ACETANILIDE, ANTIPYRIN, AND PHENACETIN.

A VALUABLE report (Bulletin No 126, Bureau of Chemistry, United States Department of Agriculture, 85 pp , Washington, July, 1909), has just been prepared by Dr. L F Kebler, Dr F. P. Morgan, and Dr. Philip Ruff on the reports of physicians with regard to their personal experience in the use of acetanilide, antipyrin, and phenacetin The objects of the inquiry were similar to those of the Therapeutic Committee of the British Medical Association, which in 1894, *under the chairmanship of Dr. D J. Leech,* concluded that the ill effects of these remedies were very largely the direct result of injudicious and excessive dosage This report made a deep impression upon the medical mind, with the result that smaller doses have been given and the number of accidents reported has fallen off to a remarkable extent. Dr. Kebler and his collaborators addressed a series of questions to 925 physicians and received 400 replies which are summarised in Table I. ;—

TABLE I

	Poisoning.	Deaths.	Habitual use.
Acetanilide	614	16	112
Antipyrin	105	5	7
Phenacetin	95	7	17
	814	28	136

A careful search was also made in the medical literature during the period 1884–1907, and the results of this search are given in Table II. .—

TABLE II

	Poisoning	Deaths.	Habitual use.
Acetanilide	297	13	32
Antipyrin	488	10	—
Phenacetin	70	3	1
	855	26	33

The section on the literature of the subject occupies 60 pages and contains abstracts of the cases referred to It forms a valuable bibliography of the subject. Turning to the details of Dr Kebler's correspondence with physicians, phenacetin was used frequently or moderately by 36 7 per cent of the physicians, acetanilide by 30 per cent , and antipyrin by only 5 per cent Phenacetin is most extensively used because it is generally regarded as being the least harmful *of these substances.* It was *found that the doses of these remedies* employed to day are much smaller than those formerly prescribed. In the case of acetanilide, the replies of 274 physicians indicate that 87 5 per cent of them never prescribe higher doses than five grains, while about *70 per cent. prescribe* antipyrin and phenacetin in doses not exceeding five grains It was also found that from 51 to 66 per cent. of the observers now prescribe these remedies less frequently than formerly Of the 814 cases of poisoning reported, 94 were children, while the drugs were administered without a physician's prescription in 377, or about 46 per cent , of the cases This fact is specially significant in connexion with the ever-increasing sale of hese drugs, and of preparations containing them, to the public In such cases the remedy is taken without the safeguards that *ordinarily* attend the ingestion of medicines when ordered by a physician It is of interest to note that in the case of acetanilide poisoning resulted from its external application in 2 3 per cent. of the cases As regards the quantity taken in cases of *poisoning,* of the *368 cases* in which acetanilide was given to adults a dose of five grains or more was given in 89·9 per cent., with antipyrin a dose of ten or more grains was given in 89 7 per cent. of the cases, while with phenacetin the toxic effects were caused by doses of ten grains or more in 67·8 per cent of the cases In children, in over 85 per cent of the cases the poisonous effects were caused by doses of two grains or more of acetanilide or of three grains or more of antipyrin The report serves to warn physicians that care should be taken in prescribing these substances, even *in relatively small doses.*

THE ALPINE MINOTAUR.

NOT more inexorably did the Cretan monster exact his yearly tribute of the Athenian youth, male and *female* than does his Alpine counterpart—the evil genius of foolhardy adventure—claim his annual toll of victims The summer now passing—nay, the winter and spring already past, have numbered quite as many sacrifices as their predecessors to that ruthless Cacodaemon, who may confidently anticipate—so vainly has experience held out its warning—an equal contingent of such in the years yet to come. The old, old story will keep repeating itself, the amateur "peak-stormer," heedless of the fact that his enterprise demands special training, with special *equipment and guidance, under special conditions of physique* and health, before he can essay it with success or safety, will still venture out and up, in regions unfamiliar, with nothing but curiosity and pluck to sustain him, till, after hours of *exertion,* he *loses his* way, his head, and ultimately his life, overtaken by a mist or overwhelmed by an avalanche, or overbalanced on the brink of a crevasse And this tale, told for the thousandth time, will yet be told for the *thousand and first unless some "deus" or demigod "ex machina,"* in the form of a Theseus in science, aided by the guiding thread of an Ariadne in resource, makes Alpine misadventure and the "Minotaur's" maintenance alike impossible by deterring from pass and peak all but the adequately trained and the physically and mentally "assured" First attempted by the Teutonic races, the exploration of the Alps, unessayed by the Romans on whom the glories of landscape were thrown away, begins with sixteenth century humanism embodied in Conrad Gesner, the Swiss scholar, whose treatise "De Admiratione Montium" may be taken as the "evangel" of mountaineering, scientific and artistic Of late years, however, the French, and particularly the Italian, nature student and athlete has in ever-increasing numbers enrolled himself in the army of Alpine adventurers, attended, however, by such a host of camp followers in the shape of amateurs as to double, nay treble, the casualties that have hitherto overtaken even the regular recruit. "Impressionanti Disgrazie sulle Alpi" (sensational accidents on the Alps) is the heading in a leading Roman journal of a series of fatalities occurring within the last week of July, mainly to Italian [illegible] xperience the well nigh inevitable [illegible] ardous of all enterprises with less [illegible] recklessness than either. Signor [illegible] e, having gained a "coign of vantage" on the Diveria at the Bridge of Crevalodossola fell headlong to the bottom, where he was found a corpse Signor Andrea Consoli, another youth of 21 years, *overtaken* on the Majenfeldfurku by a furious snowstorm, was frozen to death; and so on in many cases, the rash attempt to pluck a flower on the margin of a precipice, or to root out a mineralogical specimen from a rocky façade, having carried the Alpinista over the edge or crushed him under a "Steinschuss" Such casualties, it may be said, will be minimised by the "vicarious progression" afforded on funicular or cog wheel railway Possibly, but that means of gaining altitudes above the snow line has dangers of its own, recorded and illustrated *at many a Swiss medical congress, memorably in that at Arosa some* 10 or 12 years ago Middle aged tourists, with cardiac lesion incipient or developed, could run few greater risks than that of being "ballooned" up a mountain side like that *of the Jungfrau* or (*now it seems likely*) *Mont Blanc*—some of them realising for the first time, in distress and panic, that they had such a thing as a heart at all! "Knowledge comes, but wisdom lingers", and even with the admonitions of medical science we are quite prepared to hear of the holiday-seeker, tempted by the "ampler ether,' the "diviner air," of a resort above the snow-line, throwing prudence to the winds, and essaying a "vicarious ascent" safe only for the young and the heart whole!

> "Audax omnia perpeti
> Gens humana ruit per vetitum nefas ;"

and before the century is much older we may have aerial navigation seducing many a holiday or health-seeker on a voyage confronted by unforeseen dangers, the multiplication of which may inspire medical congresses to discussions and admonitions even graver, if not less idle, than those convened to convince of his folly the middle-aged "altitudinarian"

BAGS AND BOTTLES

WITH the arrival of the holiday season we are tempted to ask a question which has probably occurred to many *of* our readers when looking out their baggage in preparation for leaving home, or perhaps when passing a trunk maker's shop window with its well ordered display of leather goods Whilst the first glance at an open trunk or portmanteau can leave no doubt of the function of its every part, the dressing bag, and in some cases the suit case—most convenient of impedimenta—*if they belong to the more expensive class, present* as soon as they are opened a problem on which we seek enlightenment, What did their maker intend their user to put in the array of bottles which they contain? We do not exaggerate in computing that a completely fitted dressing-case carries in addition to its complement of brushes, razors, and mirror, from eight to a dozen glass bottles, and boxes often with decorative lids or tops We will acknowledge that they look very pretty and that a bag thus equipped forms what is known as an "attractive and handsome present," but *the only person to whom we can conceive it as being of the fullest* use is the fashionable obstetrician Such a receptacle would be both [illegible] the polite *chambre d'accouchement* for it [illegible] nt [illegible] ck [illegible] — [illegible] ne thing does not apply to the surgeon, whose preparations are made out of his patient's sight, and the modern physician, if he carry drugs at all, does so in the compressed form convenient for their hypodermic employment But the great majority of people who own fitted dressing cases are not members of the medical profession, and it is an interesting speculation as to why the upper travelling classes came *in the first instance to be supplied* with so many bottles We suspect that these fitted bags had their origin in days when travel was a more adventurous affair than it is at present and that a certain number of the bottles were intended to hold simple drugs for emergency use—"the spirit of hartshorn" for example, or an aperient draught. Perhaps some people still fill them with such preparations, though probably the tablet drug in the pocket has taken the place of the case of liquid medicines. If our surmise is correct the bag-maker has not advanced his ideas with those of the drug purveyor, but with the conservatism notable in so many trades he continues to supply an article on the model which his grandfather made to a generation that has forgotten its use. Perhaps we are wrong, and people really exist who require a dozen bottles to hold the *arcana* of their daily toilet. But when soap, shaving-soap, tooth-powder, and possibly a preparation for the hair have been provided for, we are at a loss to know how the average man is to fill the rest of the bottles and boxes. We might allow a couple for scent to a lady who affects it, but cannot suppose its most extravagant user to carry a different perfume for every day of the week. Of cosmetics we speak with little knowledge; perhaps they to some extent solve the mystery, but they can hardly find a place in the masculine dressing-case; and we are convinced that whatever be the origin or supposed function of the receptacles in question the average man whose bag contains them would prefer their room to their company.

THE HISTORY OF COLCHICUM.

THE history of colchicum is the subject of a readable article by Dr. J. Gordon Sharp in the *Pharmaceutical Journal* of July 3rd. The name colchicum is derived from Colchis, a district of Asia Minor, now known as Mingrelia and Abasia. The ancient Colchis conveyed to the Greek mind a region associated with all kinds of sorcery, and so any drug coming from it was likely to be held in awe by the ignorant and in discredit by the learned. It is doubtful whether the species Colchicum autumnale grew in Colchis, but it is evident that whatever the species that were employed they were rich in colchicine, judging from the accounts of the value of the drug in articular affections of gouty origin. There is evidence that the "hermodactyl" of the Arabs and the "surinjan" of the Indian bazaars were species of colchicum. It is probable that the drug first became known in Europe shortly before it was described by Dioscorides, or about 78 A.D. The earliest mention of the drug is in the "Ebers Papyrus" (1550 B.C.). Under the name "hermodactyl" the drug was mentioned by Alexander of Tralles in "The Twelve Books of Medicine" (560 A.D.), and Paul of Ægina, in the seventh century, fully described hermodactyl and spoke of its efficacy in gout. Avicenna, the greatest of all Persian physicians (980–1037 A.D.), gave his personal testimony to the value of the drug, and in the thirteenth century Demetrius Pepagomenus, a Greek physician, wrote a treatise on gout and gave the formula of a pill composed of hermodactyl, aloes, and cinnamon. With the distrust of Arab medicine that followed from the thirteenth to the sixteenth century but little was heard of hermodactyl, and under the name colchicum the drug was condemned as dangerous by several writers, and it was ignored altogether by many others, including Culpepper (1616–1652) and the great Sydenham. As so frequently happens, however, a reaction then set in, and during the eighteenth century writers began to suggest that after all there might be some value in the drug. It was official under both names in the London Pharmacopœia of 1618, and one or both names were recognised in succeeding editions up to 1639. An interval of 149 years then elapsed until 1788, when colchicum was made official and the name hermodactyl disappeared. It is interesting to note that colchicum wine was first introduced in 1780 as a secret preparation by Husson, an officer in the French army, and was sold under the name "Eau Médicinale." It attained a great popularity and was largely imitated. Scudamore (1779–1849) wrote largely on gout and its treatment by colchicum, and ever since the drug has occupied an important position in the materia medica. Referring to the modern use of colchicum, Dr. Sharp remarks that the official doses are often exceeded owing to the belief that the drug acts best in doses bordering on the toxic side. The alkaloid is not largely employed, although the salicylate is occasionally prescribed in the form of pills or in solution in methyl salicylate. He suggests that colchicine salicylate will probably be more largely prescribed in future in the form of an ointment to be applied to affected joints.

HISTORICAL RESEARCHES ON SYPHILIS.

To the Editor of THE LANCET.

SIR,—I do not think the attempt of Dr. Kronfeld of Vienna to prove the antiquity of syphilis from the examination of an ancient Greek vase can be considered convincing. In a paper that he read before the Gesellschaft der Aerzte (reported in THE LANCET of July 31st, p. 333) he describes a Greek vase of the seventh or eighth century B.C. which showed very clearly a dark-coloured woman of negroid type presenting "chronic serpiginous ulcerations on her arms and legs," and concluded somewhat hastily that syphilitic lesions were depicted. Sufficient consideration, perhaps, was not given to the fact that there are several examples among Greek and Roman fictile vases in which the dark colouring matter employed by the potter had "run" and in process of time became distorted or obliterated. It may be suggested that in this manner the appearance of the figure examined by Dr. Kronfeld can be explained. Authentic material for elucidating in some measure the lineage of the disease, which so curiously obtained its name from a poem published at Verona in the fifteenth century (*Syphilis sive Morbus Gallicus*, by Jerone Fracastoro), may be found in historical records. In no account of the disease that I have read is there any reference to Herodotus. That historian says that the Scythians of his day suffered from "a severe female distemper," and that it was regarded by the nation as a divine punishment inflicted on their ancestors for having in the course of a predatory raid plundered the famous temple of the Syrian Venus (Derceto) at Ascalon. There are fragmentary passages in other ancient writers from which it would appear that at the dawn of history the people of Athens were afflicted with a virulent disease of the genital organs which they ascribed to the vengeance of Bacchus for the negligent or insufficient observance of the festivals in his honour, the Dionysia and Phallica. With the view of appeasing the offended deity these orgiastic ceremonies, which were probably borrowed from the Egyptian worship of Osiris, were re-instituted with great solemnity in Athens, a wooden representation of the phallus being carried in procession by men specially dedicated to the service. On reading the epigrams of Martial, and bearing in mind what is known from other sources of the social conditions then prevailing in the Suburra district of Rome, it is easy to imagine that ravages caused by the spirochæta pallida were described by that very acute observer.

I am, Sir, yours faithfully,

Worthing, August 7th, 1909. W. W. J.

AMATEUR PRINTING AS A HOBBY FOR MEDICAL MEN.

To the Editor of THE LANCET.

SIR,—May I, through the medium of your columns, suggest that if any of your readers happen to be amateur printers they should put themselves in communication with me? I would gladly supply information. Medical men find this hobby useful in a variety of ways (e.g., memoranda, lecture syllabuses, labels, bills), in addition to the artistic taste to which it ministers.

I am, Sir, yours faithfully,
E. H. BLAKENEY,
Hon. Secretary, Amateur Printers' Association.

Ely, August 9th, 1909.

◆

Corrigendum.—In a report of the proceedings of the Central Midwives Board on p. 409 of THE LANCET of August 7th, the third sentence of the "Leaflet" on ophthalmia neonatorum begins "It generally arises." We are asked to say that this should read "The disease generally arises."

L.R.C.S. is advised not to enter into any such negotiation. His position as a medical man might, under the proposed agreement, be used to give a professional colouring to some very dubious proceedings.

Enamel.—We have no knowledge of the preparation in question, but if our correspondent will forward us a sample we shall be pleased to analyse it.

A Widow has neglected to supply us with her name and address. If these are sent we may be able to forward her wishes.

Perplexed has failed to entrust us with his name. The communication is of considerable interest.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRA[illegible]IONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, [illegible]mmersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: D[illegible]on-tration of Cases in Wards. 12 noon, Pathological Demon[illegible]ation.—Dr. Bernstein. 2 P.M., Medical and Surgical Clin[illegible]. X Rays [illegible]ons. 5 P.M., Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Oper[illegible] Lecture:—Mr. Pardoe: Difficult Micturition and Retention of Urine.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcologic[illegible] Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. [illegible] Diseases of the Skin. 5 P.M., Lecture:—Dr. Lo[illegible] Insects as Carriers of Disease in Tropical Climates.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Diseases of Children. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

THURSDAY.—10 [illegible] trar: Demonstration of Cases in W[illegible] ical Clinics. X Rays. Mr. Dunn: [illegible], Operations.

FRIDAY.—10 A.M., Lecture;—Medical Registrar: Demonstration of Cases in Wards. Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Diseases of Children. Mr. Harman: *Diseases of the Eyes.* 2 P.M., Medical and Surgical Clinics. *X Rays.* 2.30 P.M., Ope[illegible]tions. Dr. Robinson: Diseases of Women.

OPERATIONS.

[illegible]

National Orthopadic (10 A M) St Peters (2 P M), Samaritan 9.30 A M and 2.30 P M) Gt Northern Central (2 30 P M), West- [illegible]

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THE INDEX TO THE LANCET.

The Index to Vol I of 1909, which was completed with the issue of June 26th, and the Title-page to the volume, were given in THE LANCET of July 3rd

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(Taken daily at 8 30 a m. by Steward's Instruments)

THE LANCET Office, August 12th, 1909.

Date	Barometer reduced to Sea Level and 32° F	Direction of Wind	Rain fall	Solar Radio in Vacuo	Maximum Temp Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks
Aug 6	30 23	E.	...	122	80	58	60	66	Fine.
„ 7	30 14	E	...	125	81	59	61	67	Fine
„ 8	30 13	E	.	127	77	57	60	64	Fine
„ 9	30 03	E	..	126	81	57	63	62	Fine
„ 10	30 17	E	. .	119	80	61	63	67	Fine
„ 11	30·29	S	..	117	82	59	59	63	Fine
„ 12	30 20	W.	...	126	82	59	62	69	Fine

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ON

THE PRESENT STATE OF OUR KNOWLEDGE OF THE BACTERIOLOGY AND PATHOLOGICAL ANATOMY OF LEPROSY.

Delivered at the Second International Scientific Congress on Leprosy (to open the Discussion on the Pathological Anatomy of Leprosy) held at Bergen, August 16th to 19th, 1909,

BY J. M. H. MACLEOD, M.A. ST. AND., M.D. ABERD., M.R.C.P. LOND.,

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MR. PRESIDENT AND GENTLEMEN,—When the Committee of Organisation of the Second International Scientific Congress on Leprosy invited me to open the discussion on the Pathological Anatomy of Leprosy I felt that a great honour had been conferred not only on myself but also on the London School of Tropical Medicine, whose delegate I am. At the same time I could not but feel the responsibility of the position, and would greatly have preferred that the task had fallen to someone of wider experience. At the first International Scientific Congress on Leprosy, held in Berlin in 1897, this duty was performed by the late Rudolf Virchow. The loss the world has sustained by his death cannot be over-estimated; but his influence and his teaching are a permanent heritage. Only to the few has it been given to leave their indelible imprint on the science of medicine for all time; to none more than to him. Since the first Congress in 1897 almost all the advances which have been made with regard to leprosy have been the result of a [illegible] thology and bacteriology of the di[illegible] nce has not been rapid, nor assc[illegible] or epoch-marking discovery, it has been none the less sure. In the short time at my disposal it will be my endeavour to point out wherein this advance has taken place, to state briefly the present position of our knowledge of the bacteriology and pathology of the disease, to show wherein that knowledge is defective, and to suggest certain questions for discussion.

THE CAUSE OF THE DISEASE: THE LEPRA BACILLUS.

The researches of the last 12 years, since the first Lepra Congress, have only more firmly established the lepra bacillus of Hansen as the specific cause of leprosy; although up to the present time all the postulates of Koch have not been fulfilled by it, yet the fact that it occurs universally in leprosy in all its forms, that all the symptoms of leprosy can be explained as the direct or indirect result of a pathological process produced by it, that it is absent in all other morbid entities, and that it possesses characteristics which differentiat[illegible] render its position as [illegible] that of the plasmodium [illegible] ng fever.

Morphology.—The knowledge of the morphology of the bacillus has been advanced of late by the introduction of special staining methods to demonstrate the young homogeneous bacilli, the old, granular and dead bacilli, the resistant fat in the bacilli, and the fat in the glœa which holds them together. By these methods it has been shown that a large proportion of the bacilli in the tissue are dead, that even in young newly-formed lepromata dead bacilli occur, while in older lesions the majority of the bacilli are dead. By Ziehl's method, using 20 per cent. nitric acid and counter-staining with polychrome blue, young bacilli are stained red, older bacilli violet, and granular bacilli blue. Emile-Weil[1] suggested the employment of the Baumgarten method, namely, staining with aniline violet in the cold, and using nitric alcohol (1 in 10) to differentiate. By this means the bacillus does not lose its stain. Unna,[2] for the double staining of normal and dead bacilli in the tissues, suggested the employment of Victoria blue, 1 per cent. nitric acid, and saffranin; this stains the normal bacilli blue and the dead bacilli yellow. The differentiation by means of staining methods of the lepra bacillus from the tubercle bacillus is uncertain, though various methods have been suggested, based on the fact that the lepra bacilli, when stained by Ziehl's method, more readily lose their stain when treated with nitric acid than the tubercle bacilli, and we are compelled to fall back on other characteristics to distinguish them.

Classification.—The classification of the lepra bacillus is a matter for discussion at the present time. Until recently the bacillus was believed to belong to the class of schizomycetes, but the finding of a cladothrix arrangement by Barranikow and others,[3] and of branching forms like actinomyces, have rendered it probable that it belongs to the class of the streptotricheæ. In the bacilli small spheres have been noticed, and have been described as "spores," but the evidence that they are true spores is not conclusive.

Cultivation.—In spite of the numerous attempts which have been made during the last decade to cultivate the bacillus, no medium has been discovered on which it will invariably grow. From time to time observers have announced that they have succeeded in cultivating it, but further experiments by themselves or others have usually failed to establish their claim, and showed that either the technique was defective, that the cultivations had become contaminated, or that some other acid-fast micro-organism, like the tubercle bacillus, had been grown. Of the many attempts to cultivate the lepra bacillus claimed to have been successful, but which have not been definitely established, three may be mentioned. 1. Carrasquilla[4] reported that he had cultivated the lepra bacillus on human blood serum and on beef bouillon. 2. Van Houtum[5] recorded positive results on broth prepared with fish and beef, and rendered alkaline with leprous material. He also claimed that the bacilli, when mixed with diluted human serum, showed the Pfeiffer-Bordet reaction with destruction of bacilli, which was more marked with leprous serum than with ordinary serum. 3. Emile-Weil,[6] working in the laboratory of the St. Louis Hospital, Paris, under M. Sabouraud, claimed to have cultivated lepra bacilli from recent leprous nodules on several peptone-glucose and peptone-agar media containing pleuritic serum. His apparently most successful experiment was by inoculating leprous material in a hen's egg as follows. The juice from a recent nodule was taken up by a pipette. This was introduced into the yolk after piercing the broad end of the egg. The small hole was afterwards closed up by a collodion scab and the egg incubated at 37°. The yolk was then turned out on a Petri dish, and in it a small yellowish nodule about the size of a hemp seed was observed, which proved to be a colony of lepra bacilli. This result was obtained twice out of 26 eggs inoculated.

Up to the present not only has no satisfactory medium been found on which the lepra bacillus will grow, but it has not been proved that the bacillus is present and can lead a saprophytic existence on decayed organic matter, such as decayed fish, meat, rice, or in the soil. If the bacillus could lead such a saprophytic existence there should be no great [illegible] found to exist in decayed fish and to be capable of being recognised there, the fish theory of the etiology of leprosy cannot be regarded as other than a hypothesis which is unsupported by scientific fact.

Inoculation.—Up to the present time no lower animal has been found which is susceptible to leprosy. Numerous inoculation experiments have been made on different animals, chiefly monkeys, rabbits, and guinea-pigs, the leprous material being inoculated under the skin, in the peritoneal cavity, in the anterior chamber of the eye, &c., but invariably with negative results. Nicolle of Tunis[7] excised a nodule from a leper. This was broken down, diluted with sterile water, and inoculated on the temples of a monkey after scarification, also on the conjunctiva, nasal mucosa, and on the left ear under the skin. A Macacus ape was similarly inoculated. Four days afterwards all traces of the inoculations had gone and an examination of the nasal mucus showed no bacilli. A month later a small subcutaneous nodule appeared in front of the ear and a few days afterwards one or two small, indurated, red nodules in the auricle. These remained unaltered for some time. A histological examination showed an accumulation of lymphocytes but no giant cells or caseation. The bacilli in the tissue were few and were almost all in the cells. There was no definite "lepra cells."

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[1] Lepra, 1906, vol. vi., p. 33.

[2] Monatschrift für Praktischen Dermatologie, 1903, Band xlvi., p. 195.

[3] Charkow: Transactions of the Dermatological Society, 1900.

[4] Communication to the National Academy of Medicine, Bagota, Columbia, 189[illegible].

[5] Journal of Pathology and Bacteriology, 1902, p. 290.

[6] Annales de l'Institut Pasteur, 1905, p. 703.

[7] Lepra, 1905, vol. v., p. 190.

Presence of lepra bacillus in insects.—So far the microbe has not been found in mosquitoes, nor in other insects suspected of disseminating the disease, though in this connexion Goodhue[8] claims to have found the bacillus in the gnat and the bed-bug (*Cimex lectularis*). This observation, so far as I am aware, has not been corroborated by others.

Serology.—An immunising serum has not yet been obtained for leprosy, and all attempts to extract from lepromata a substance which would produce in leprous patients a reaction analogous to that produced by tuberculin in tuberculous patients have been unsuccessful. It is a well-known fact that leprous patients may react to the old tuberculin, but this reaction is of comparatively little significance, as individuals may react to the old tuberculin without being tuberculous. Leprous patients also react to the products of other micro-organisms. The Carrasquilla serum method has not fulfilled its promise, and the results from it have been so disappointing that it has been practically abandoned. The method was as follows. Blood was obtained from leper cases by venesection performed on the patients at the febrile period when the blood was at its maximum toxicity. From this a leprous serum was separated and injected a few hours after collection into a horse, three injections being given at intervals of ten days. From this horse after ten days a serum was obtained, which was injected into the patient. Tidswell[9] gave a careful account of his experience with the serum, and reported unfavourably regarding it. He found that with injections of 5 cubic centimetres in the human subject, injected every three to five days for a period of nine months, no marked reaction was produced, and no rigor, fever, joint pains, or erythema occurred. At first the patients said they felt better, but, as is usually the case with a new remedy, when they got accustomed to it, they became as listless as before. No change in the nodules and macules were detected; anæsthesia persisted, alopecia and defects of sight were not improved, and the disease did not seem to be ameliorated or arrested. After nine months' trial the patients declined to submit to further treatment with the serum. Rost, in 1904,[10] claimed to have succeeded in cultivating the lepra bacillus in an achloretic medium, and to have produced from it a "leprolin," made on the same principles as Koch's tuberculin. The bacillus which was cultivated, however, did not prove to be the lepra bacillus, and the reaction produced by the so-called "leprolin" when injected was possibly due to "filtered toxins from the contaminated media" (Semple). In the same year Deycke[11] succeeded in cultivating a streptothrix from cases of nodular leprosy. This streptothrix he did not consider to be the lepra bacillus, but from it a well-defined neutral fat was extracted by ether, to which the name "nastin" was given. This, when combined with benzoyl chloride and injected, produced a bacteriolysis, and was said to cause an arrest of the leprous process.

MODE OF INVASION.

The path of entrance of the lepra bacillus is a point of importance with regard to the prophylaxis of the disease, but it is still *sub judice*. It would seem most probable that the bacillus may gain entrance in various ways. Probably the most common mode of invasion is *viâ* the *nasal mucosa and upper respiratory tract*. This view is corroborated by the frequency with which nasal symptoms form one of the earliest manifestations of the disease, such as rhinitis, chronic coryza, ozæna, epistaxis, lepromata in the nasal mucosa, and the presence of lepra bacilli in the nasal discharge. Kolle[12] examined the nasal mucosa of 137 lepers for bacilli at Robben Island. He found bacilli in the mucus in all the 45 nodular cases. In 30 cases of mixed leprosy bacilli were found in the nasal mucus in 22. In 60 anæsthetic cases he only found the bacillus in the nose in 21. In 30 cases no bacilli were found in the nasal mucosa, but in two of these they were found in the sputum. The lepra bacilli may also gain entrance *viâ the mouth* and infect the tonsils, and they have been found in the sputum. With regard to the *alimentary tract* being a path of infection, the evidence at the present time is less conclusive. Nothing suggestive of an initial lesion producing definite symptoms has been located there, nor has the bacillus been found in food-stuffs, except in the human milk. The invasion of the bacilli may take place through the *skin*, especially when the stratum corneum has been abraded by traumatism, or its resistance lowered by some form of dermatitis. The *genital organs* may also be the means by which the bacillus gains entrance, and in this case the infection probably takes place from lepromata situated on the penis or in the vagina. Although the testicles are frequently involved there is no distinct evidence of infection from the semen. Congenital leprosy has not been proved to occur, and in this the disease shows a strict parallelism with tuberculosis, for infants of leprous parents are not born with leprosy, but may become infected subsequently as a result of a hereditary weakness or predisposition and an existence in an environment in which contagion is liable to occur.

MODE OF DISSEMINATION OF THE LEPRA BACILLI AFTER INVASION.

After gaining entrance the lepra bacilli may be found widely distributed throughout certain of the tissues of the body. They may occur in the skin, eyes, mucous membranes, lymphatic glands, viscera, and peripheral nerves. They are absent from the muscles, bones, and joints. They do not occur in physiological secretions unless pathologically contaminated. According as the bacilli show a special predilection for the peripheral nerves in contra-distinction to a more general invasion of the tissues, with the formation of nodules or lepromata in the skin and viscera, so the two great types of the disease are produced—namely, the maculo-anæsthetic and the nodular type.

Relation of maculo-anæsthetic and nodular leprosy.—The question of the relation of maculo-anæsthetic leprosy to nodular leprosy raises certain important problems with regard to the pathology of the disease. At the present time the precise conditions which determine that a case should pertain to the one type or the other are imperfectly understood. Various hypotheses have been advanced to explain it. It has been asserted, for example, that the variation in type is simply the result of a *quantitative* [illegible] bacilli, and that where the bacilli occur in large numbers nodular leprosy results, while if the bacilli are few the manifestations are those of the maculo-anæsthetic type. This explanation is not convincing, because in the mildest cases of nodular leprosy large numbers of bacilli occur, while in the most severe cases of maculo-anæsthetic leprosy fewer bacilli may be found in the nerves, and the most careful search for them in the viscera and in the maculo-anæsthetic patches may give negative results. The cause of the vast proliferation of bacilli in the nodular cases is uncertain. Is it a racial peculiarity? Is it the result of climatic conditions? Is there a hereditary or acquired immunity by which an individual is rendered an unsuitable soil for the propagation of the bacilli, so that only the peripheral nervous system remains markedly susceptible? It has been suggested, on the other hand, that the difference in type of case is the result of a *qualitative difference in virulence of the bacilli*, and that when virulent bacilli are present nodular leprosy is produced, but where the bacilli are of low virulence maculo-anæsthetic leprosy results.

SOME CONSIDERATIONS ON THE HISTO-PATHOLOGY OF THE LESIONS PRODUCED IN THE TISSUES BY THE DIRECT OR INDIRECT ACTION OF THE LEPRA BACILLI.

After gaining entrance into a tissue the bacilli appear to lie at first in the lymph spaces, and owing to their presence produce a mild inflammatory reaction. In comparison with that caused by the tubercle bacillus this reaction is slight,

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[8] Journal of Tropical Medicine, 1906.

[9] Report on Leprosy in New South Wales, 1898; Lepra, 1900, vol. i., p. 142.

[10] Indian Medical Gazette, 1904.

[11] Lepra, 1907, vol. vii., p. 174.

[12] Deutsche Medizinische Wochenschrift, 1899, Band xxxix.

[illegible] existence a peculiar type of [illegible] peculiarities wh[illegible] infiltration is [illegible] spindle-shaped [illegible] fixed tissue and the adventitia and endothelium of the bloo[illegible] cells, and occasional polynucl[illegible]nic micro-organisms be pre[illegible] of the bacilli is mainly [illegible] multiply they form colonies or globi united by homogeneous zoogloea, and the infiltration begins to show the presence of plasma cells around the blood capillaries. A certain number of bacilli become intracellular, and large characteristic cells containing vacuoles, one or more badly stained nuclei, and bacilli singly or in clumps may be noted. These are the so-called "lepra cells," on the origin of which there has been much diversity of opinion as to (1) whether they are really cells derived from connective-tissue cells or plasma cells through the presence and action of the bacillus and its toxin within them; (2) whether they are sections of lines of bacilli lying in the lymphatic spaces; or (3) are simply clusters of bacilli round a lymphocyte or other cell. Certain of the "lepra cells" are enlarged and contain several nuclei, forming a type of giant cell which is different from the Langhans's giant cell of tuberculosis, in that it has neither the [illegible] observations it is necessary to be certain that a mixed infection with tuberculosis did not exist. The bacilli enter and spread slowly through the lymphatics, forming new leprous deposits wherever they go, or they are more quickly distributed to neighbouring and distant parts by the blood-stream. The above, in brief, is the type of cellular infiltration of the "leproma," wherever it may be situated in the body.

In [illegible]en confined, as a rule, to th[illegible] a thin layer which is free [illegible] the epidermis. One or two observers have detected bacilli in the deeper layer of the epidermis in and between the prickle-cells, and also in the *corresponding layer of the hair-follicles*, but it is doubtful if they exist in the sebaceous glands, as they have an aversion to fat. More important as regards the spread of the disease is the fact that bacilli have been found on the surface of the epidermis and in the scales. It is doubtful, however, if [illegible] surface from within, and it is [illegible]ey have been deposited there [illegible] from the upper respiratory [illegible]hing. It is possible also that they may have been eliminated by the sweat, as they have been found both in the sweat and the sweat glands. The presence of bacilli in the small cutaneous nerves, and the changes produced by them, are responsible for the alteration [illegible] nodule. The pathological [illegible] leprosy is of the same type [illegible]es, but it appears later and [illegible]

[illegible]*cera.*—With regard to the leprous changes in the viscera little has been added to our knowledge since the last congress. *In the spleen, in addition* to the leprous infiltrations in the trabeculæ, pulp, and [illegible]necrotic masses have been [illegible] tuberculosis with typical [illegible]ses have to be further verified from the point of view of tuberculosis before they can be finally accepted. The involvement of the *genitalia* is a matter of great importance with regard to the spreading of the disease, but there still remain certain gaps in our knowledge on this subject. On the penis nodules and flat infiltrations or ulcers with pus and bacilli have been observed from time to t[illegible] of 40 cases.[14] [illegible] between the [illegible] tubules thems[illegible] evidence that the semen contains bacilli. The atrophy which succeeds the sclerosis results in sterility. It is much the same with the ovaries. The presence of the bacilli [illegible] urine. In the *lungs* a pure leprous infiltration may exist, with sma[illegible] vascular [illegible] cells of [illegible] indicatin[illegible] *lymphatic glands*, like the lungs, may be the seat of a mixed infection with tuberculosis, and show caseation and other signs of it; on the other hand, a pure leprous infiltration may occur.

Although the changes in t[illegible] well known, and bacilli hav[illegible] cells, the *blood* changes ha[illegible] out. Bacilli have been de[illegible] during the active stages o[illegible] observers (Köbner, Wolters, [illegible] They were either lying free o[illegible] The blood changes are not [illegible] those of chlorosis, and are [illegible] ciated with the disease. Eo[illegible] Gaucher, Bensaude, and others. *Note.*—In making blood-[illegible]osy it is important to avoid [illegible]

[illegible] advance has been made [illegible]rosy of the eyes. It is one [illegible]nodular leprosy, and occurs usually after the face, eyebrows, and eyelids have been affected, and it is rarely a primary manifestation. Apart from the involvement of the eye due to pyogenic micro-organisms or injury where the cornea is anæsthetic, or the [illegible] spreads from within outwards or passes in from the outside. Until lately the generally accepted view has been that the [illegible] deeper parts.

In a recent paper on the subject Calderaro[16] advocates the [illegible]without. According [illegible] spreads on to the globe from the margins of the eyelids, where he found numerous bacilli, even when the [illegible] The first signs of this infection [illegible] infiltration of the conjunctiva, a [illegible] gradually became converted into leprous tissue. The sclero-corneal limbus was next attacked, and a diffuse opacity of the cornea occurred, sometimes associated with the presence of small bullæ containing a dirty yellow fluid. The sclerotic [illegible]many years, [illegible] it bacilli [illegible]veal tract. [illegible]and the iris [illegible]read far in the choroid and the retina and optic nerve were seldom [illegible]blindness occurred.

[illegible]servers are at one with regard to the essential features of the histological architecture of the lesions in nodular leprosy, there is still a diversity of opinion with regard to the histo-pathology of the patches in maculo-anæsthetic leprosy. It has been suggested on the one hand that these patches have the same [illegible]only less pronounced, [illegible] in the evolution of [illegible]wever, is not borne [illegible] do not begin with [illegible]ulo-anæsthetic lesions. On the other hand, it has been [illegible]rted that they are totally different from the lepromatous nodules, the one being an infective granuloma, while the

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[13] Schäffer: Lepra, 1900, vol. i., p. 11.

[14] Lepra, 1900, vol. i., p. 4.

[15] Glück and Wodynski. Archiv für Dermatologie und Syphilis, 1903, Band lxvii., p. 33.

[16] La Clin. Oculist, 1909.

other is in the nature of a persistent inflammatory process of the type of erythema perstans. The second suggestion appears to me to be the more probable. At first an erythema occurs which is followed by a slight infiltration of round and spindle-cells about the capillaries, sweat-glands, and hair-follicles, and a deposit of pigment in the perivascular cells. In association with this infiltration no true "lepra cells" can be detected. This process is centrifugal in its evolution, tending to disappear in the centre, so that ringed lesions may result.

The chief point at issue is the manner in which these changes are brought about. Certain observers believe them to be "neuro-leprides," and to be indirectly produced by the action of the bacilli on the nerves supplying the area affected, in the same way as the bullæ of nerve leprosy. Others regard them as the result of toxins eliminated by bacilli situated at a distance from the skin and circulating in the cutaneous capillaries, and as corresponding to the "tuberculides" of Darier. Others, again, consider them to be due to the action of the toxins of the bacillus *in situ*, and regard the nerve-change as secondary.

In consequence of these diverse opinions much interest has been centred round the question of the presence or absence of the bacilli in the maculo-anæsthetic patches. Some observers, such as Looft, Hansen, Pollitzer, and Klingmüller, have succeeded in finding bacilli in these patches situated in the endothelium and about the capillaries of the skin. There are others, however, who after the most patient search have failed to find them in true maculo-anæsthetic patches, while they have found them in slightly infiltrated lesions. A single definite instance, however, of bacilli being found in a true maculo-anæsthetic patch is of more value than all the negative evidence. After all, it may be extremely difficult to find bacilli in a patch of lupus vulgaris, and yet no one would deny that they are present and cause the affection. But when it is remembered that the lepra bacillus, unlike the tubercle bacillus, is a comparatively feeble micro-organism, and even in vast numbers may produce extraordinarily little reaction in the tissues, a doubt is raised as to whether a few lepra bacilli occurring in the skin are capable of causing a maculo-anæsthetic patch. It has been asserted that the bacilli are only present in the maculo-anæsthetic lesions at first and disappear from them later into the peripheral nerve-endings, and finally ascend into the peripheral nerves. This assertion has been put forward to explain the failure to find bacilli in the patches.[17] The *peripheral nerves* may be involved in all forms of leprosy, but it is in the maculo-anæsthetic type that the involvement is most marked and rapid. In this type of leprosy it would appear that the site of diminished resistance to the bacillus is *par excellence* the peripheral nervous system.

Much good work has been done recently in connexion with *nerve leprosy*, and considerable advance has been made in our knowledge of the subject. All leprologists are agreed that the lepra bacilli may affect the nerves in their whole course, but there is no unanimity with regard to the mode of invasion, and opinions are divided as to whether the nerve infection occurs first in the finer endings in the skin and ascends, or is a descending process, the result of a general infection.

Lie, in his excellent monograph,[18] supports the view that the nerve-endings in the skin are first attacked and that this is succeeded by an ascending neuritis. It is difficult to establish this hypothesis definitely as the earliest lesions are not observed microscopically, and the first changes to be detected have been in the peripheral nerves in the form of leprous infiltrations about the vessels of the perineurium and the endoneurium. The epineurium is not, as a rule, affected, unless from traumatism in exposed situations such as the elbow. The bacilli may be within the connective-tissue cells or plasma cells, or may lie free in the lymphatic spaces. Between the nerve fibres they tend to occur in rows rather than in clumps or globi. They have been observed in the neurilemma and the sheath of Schwann,[19] but they have not been detected in the axis-cylinder of the nerves. The presence of the bacilli and their toxins lead to neuritis and interstitial proliferative changes, which, by pressure on the vital nerve tissue, cause degeneration and a fragmentation of the axis-cylinder. Although the bacilli are present in large numbers in the nerve tissue they do not occur in such masses as in lepromata.

It has been asserted that the painful neuritis set up by the bacillus leads to its eventual destruction, so that nerve leprosy is, in a fashion, self-curable. This is a hypothesis of considerable interest, as it would mean, if it were true, that many maculo-anæsthetic lepers, in whom the disease is of old standing and appears to be quiescent, are in a sense cured, the actual virus of the disease being no longer present, only the effects in the form of anæsthetic patches or trophic lesions. This is a point well worthy of discussion.

There is a great diversity of opinion with regard to the presence of the lepra bacillus in the *cord and spinal ganglia*. Certain changes occur in association with leprosy in the posterior columns of the cord at a certain stage in the development of the disease. These changes are not due to the bacillus *in situ*, nor are they characteristic of leprosy. They are more in the nature of the changes which follow the ascending degeneration of a peripheral nerve after injury. It has even been suggested that they are not due to either bacilli or ascending neuritis, but simply result from the general cachexia attendant on the final stages of the disease. Babes claims to have found bacilli in the motor cells of the anterior horns and in the cells of the spinal ganglia. The changes, however, in the anterior horns are too slight and inconstant to account for the state of the motor roots and for the degeneration of the motor nerves. The changes in the peripheral nerve system are responsible for the trophic disturbances associated with nerve leprosy; for the atrophic, weakly resistant skin, which is so liable to infection with pyogenic micro-organisms and to the formation of unhealthy ulcers; for the bullous eruptions, suppression of the sweat, vaso-motor disturbances like Raynaud's disease, loss of power and atrophy of the muscles, and necrotic changes in the bones. In addition to these direct effects, the devitalisation which results from the defective circulation renders the consequences of injury much more severe and retards recovery.

In conclusion, I would emphasise the importance of recognising the possibility of the *association of leprosy with other diseases* in the same individual and at the same time. Many mistakes have occurred from failure to recognise this possibility, and from regarding every symptom in a leper as being due to the lepra bacillus. Just as syphilis may occur in association with other affections, so may leprosy. The association of leprosy and tuberculosis has been frequently noted in the case of the lungs, and yet there has been a tendency to overlook this possibility elsewhere, and before regarding the caseation with Langhans's giant cells, which has been described in the spleen, lymphatics, and skin, as manifestations of leprosy, it is essential to eliminate by inoculation experiments the possibility of a mixed infection with tuberculosis. In the case of maculo-anæsthetic leprosy, in which psoriasis-like patches have been described, before regarding these as leprous changes it is well to consider the possibility of psoriasis and leprosy occurring together. It is not unusual to find psoriasis and syphilis together, and there is no reason why a common skin affection like psoriasis should not occur in a leper. The simultaneous occurrence of leprosy and syphilis, *though* unusual, has also been observed.

GUARDIANS AND MEDICAL OFFICERS.—It was recently proposed by the Chorlton-cum-Hardy board of guardians that representations should be made to the Local Government Board in favour of allowing all medical men to act as district medical officers and public vaccinators, payment for their services to be made according to a scale to be fixed by the guardians. This scheme was brought before a meeting of the finance and general purposes committee of the Salford guardians on August 13th. One of the guardians said the system was in operation in Scotland, and suggested that further inquiry should be made. Another gentleman said the resolution of the Chorlton union was brought forward by the Socialist section of the board, and moved that no action be taken. He thought that such a system would open the door to a good deal of corruption. The motion was not adopted.

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[17] Lie: Lepra, 1905, vol. v., p. 78.

[18] Lepra in Ruckenmark und den peripheren Nerven, 1904.

[19] Sokolowsky: Virchow's Archiv, 1902, Band clxxxix., p. 3.

The Hunterian Lectures
ON
MALFORMATIONS OF THE HEART.

Delivered before the Royal College of Surgeons of England on March 8th, 10th, and 12th, 1909,

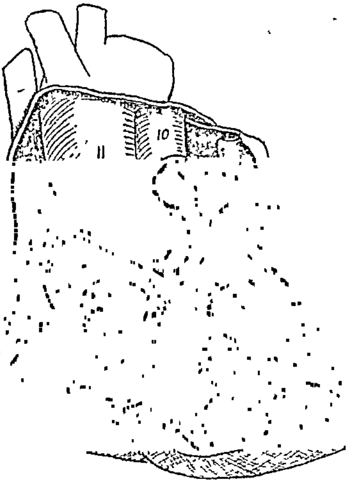
BY ARTHUR KEITH, M.D. ABERD.,
F.R.C.S. ENG.,
HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND CONSERVATOR OF THE MUSEUM.

LECTURE III.[1]

Delivered on March 12th.

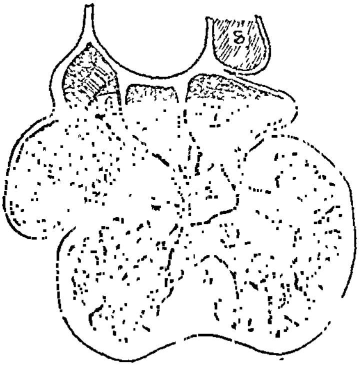
Absence of the septum ovale.—The condition I now proceed to describe to you, although frequently regarded as patency of the foramen ovale, is really a more serious defect. The malformation is shown in Fig. 19; we have no specimen in the College collection and I have seen only five examples. Not only is the foramen ovale open, but the septum ovale—that part of the interauricular septum which forms the floor of the fossa ovalis—is absent, so that there is a large circular window between the two auricles. The lower margin of the orifice is formed by a septal strand which can be traced to the valves bounding the orifice of the coronary sinus, which it will be remembered are derivatives of the first chamber of the heart—the sinus venosus. The condition is interesting because it bears out the statement made by His, and afterwards denied by Born, that in the lowest part of the interauricular septum there is an element derived from the sinus venosus (Fig. 20). It is also important because the node or small mass of peculiar muscle in which the auriculo-ventricular bundle commences is found in the region of the interauricular septum formed by the sinus element. Indeed, Retzer regards the node as really composed of sinus musculature and the bundle and its branches as outgrowth from the node—a view which is not only in opposition to all that is known of the comparative anatomy of the bundle, but also unsupported by embryological evidence. In cases of absence of the septum ovale the element derived from the sinus and described by His under the name of spini vestibuli is present, while the real interauricular septum, at least the part which forms the septum ovale, is absent. In a model prepared by His the spini vestibuli grows out from the lower fornix of the venous valves which guard the orifice of the sinus venosus, and reaches the endocardial cushions to fuse with the lower margin of the real interauricular septum, known to embryologists as the septum primum (Fig. 20). In reptilian hearts the lower fornix of the venous valves ends on the auriculo-ventricular valves (see Fig. 2 in THE LANCET, Feb. 27th, 1904, p. 556).

FIG. 19.



opening of inferior vena cava.

FIG. 20.



Coronal section of the heart of a human embryo about five weeks old. (After His). 1, Lower end of interauricular septum; 2, separation between auriculo-ventricular orifices formed out of the endocardial cushions—it is joined by the venous valves on the right side; 3, interventricular septum within ventricle; 4, the same on section; 5, opening of sinus venosus between right and left venous valves; 6, right auricle; 7, left auricle; 8, left superior vena cava; 9, infundibulum; *a*, *b*, lower ends of infundibular septum.

Abnormal foramen in posterior part of the interauricular septum.—There is another defect of the auricular septum of which I have seen but two examples: one of them occurred in the case of a woman, aged 45 years, under the care of Dr. F. J. Smith in the London Hospital. The defect, a large aperture, 15 by 20 millimetres, situated in the auricular septum above the fossa ovalis (Fig. 19), gave rise to no symptoms during life. In this case the defect was correlated with an abnormal termination of the right pulmonary veins; they terminated in the right auricle between the openings of the upper and lower caval veins. The mixed blood of the right auricle had by means of the interauricular defect free access to the left auricle. The communication in this case is probably one between the parts of the right and left auricle formed out of the sinus venosus.

Premature closure of foramen ovale.—How far imperfect formation and premature closure of the foramen ovale is a factor in the causation of other congenital malformations of the heart I am not yet in a position to say, but I have observed in several cases that the opening and fossa were abnormally small.

Abnormal septum in left auricle.—Time does not permit me to deal with the various abnormalities of the Thebesian, Eustachian, and other remnants of the two venous valves in the right auricle. In THE LANCET of Feb. 27th, 1904, p. 556, I have figured a case where both valves persisted. I now pass on to another condition which is not yet represented in the College collection—viz., the presence of an abnormal septum in the left auricle. The three cases which I have seen are those already published by Professor T. Wardrop

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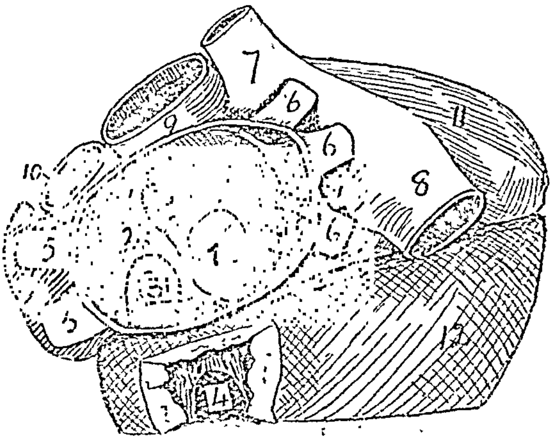
[1] Lectures I. and II. were published in THE LANCET of August 7th (p. 359) and 14th (p. 433), 1909, respectively.

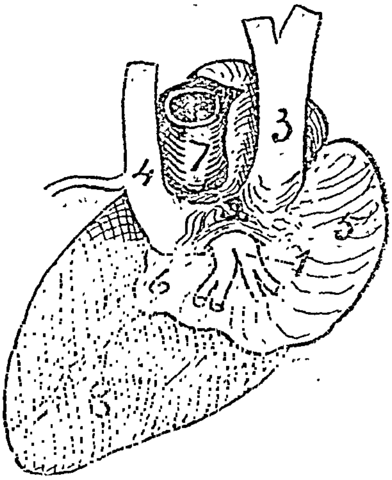
Griffith (two) and by Dr. H. D. Rolleston (one). The illustration is taken from a case well reported by Potter and Ranson in the *Journal of Anatomy and Physiology* (October, 1904, p. 69). The left auricle is imperfectly divided by the septum into two compartments, one of them receiving the pulmonary veins—the vestibular part, the other or body of the auricle communicating with the appendix as well as the vestibule (Fig. 21). The condition is interesting because it shows the dual composition of the left auricle, one part, the vestibule, being derived from the opening up of the common termination of the pulmonary veins, the other from the primitive auricle. The abnormal septum occurs at the line of fusion of these two elements. In Fig. 22 is represented a heart in which there has been an arrest of the expansion of the pulmonary sinus to form the vestibule of the left auricle. I have seen three hearts showing this arrested condition of the vestibule—all of them associated with other grave malformations. As in the case shown in Fig. 22, the left superior vena cava and left duct of Cuvier [illegible]

FIG. 21.



Left auricle opened to show subdivision by an abnormal septum. 1, Septum ovale in left auricle; 2, abnormal septum; 3, communication between vestibule and body of left auricle; 4, cavity of left ventricle opened; 5, left pulmonary veins; 6, right pulmonary veins; 7, superior vena cava; 8, inferior vena cava; 9, aorta; 10, pulmonary artery; 11, right auricle; 12, right ventricle.

FIG. 22.

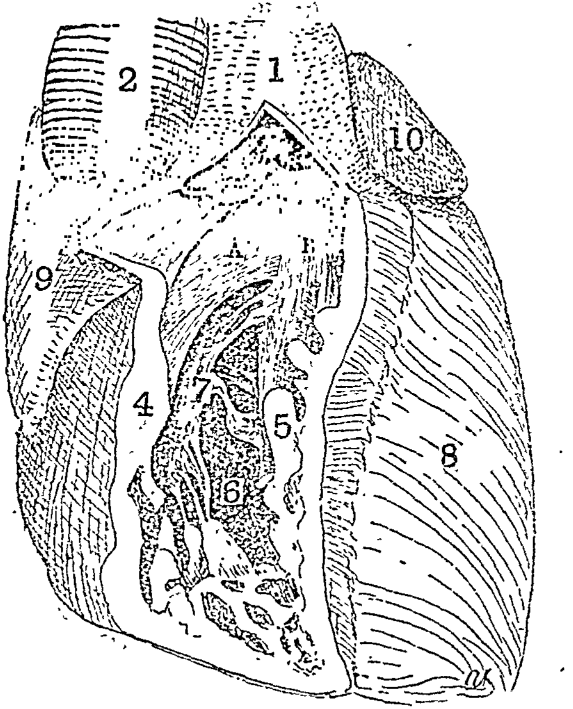


Arrest in the development of the vestibule of the left auricle. [illegible] unexpanded vestibule of left [illegible] vena cava; 4, left superior vena [illegible], 6, coronary sinus; 7, aorta; 8, ventricles.

Interbulbar or [illegible] —Before describing the defects of the interventricular septum it is convenient to return again to the aortic end of the heart and to describe certain defects in the septum of the heart which are at present very imperfectly understood. The position in which such a defect occurs is shown in Fig. 19. The opening is seen to be situated in the septal wall of the infundibulum of the right ventricle, and to communicate with the left ventricle under the right coronary cusp, which forms the upper boundary of the opening. It is situated in that part of the heart which we have seen is derived from the bulbus cordis, and we are dealing here with a defect not really of the interventricular septum, but of the interbulbar. Rokitansky, in his classical monograph, represents exactly the condition seen in a specimen lately shown to me by Professor Wardrop Griffith, and in two others, one in the Museum of St. George's Hospital, and already described by Dr. Rolleston and another in the Museum of Guy's Hospital. In the heart figured in my first lecture (Fig. 2, THE LANCET, August 7th, p. 360) a fibrous raphe (the interbulbar raphe) is seen to descend on the inner wall of the infundibulum, stretching from the semilunar valves above to the interventricular orifice below. It is in this raphe that interbulbar foramina occur.

Even in the normal heart a trace of the interbulbar raphe may be seen (Fig. 23). On the septal wall of the infundibulum two great bands of musculature are seen to arise, and descend on the inner wall of the right ventricle—one towards the base of the ventricle, and therefore fitly termed the right or basal band, and another towards the apex of the right ventricle, and which may therefore be named the left or apical band. These bands take their fixed origin from the interbulbar raphe and orifices of the aorta and pulmonary artery and play an important part in emptying the ventricle. The interbulbar septum is laid down at first as an endocardial fold into which the two muscular bands just described push their origins.

FIG. 23.



The infundibulum of the normal heart. A, Right infun- [illegible] band; between their [illegible] 1, Pulmonary artery; [illegible] constriction marking the site of [illegible] is on section of moderator band); 6, [illegible] 7, tricuspid valve; 8, left ventricle; [illegible]t auricle.

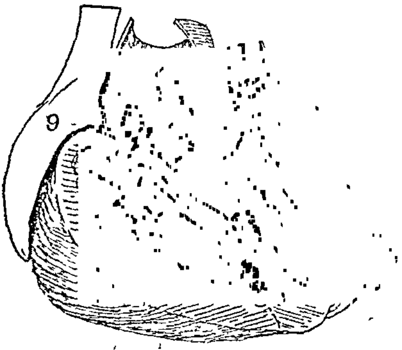
DEFECTS IN THE INTERVENTRICULAR SEPTUM.

1. *Interventricular* [illegible] The only malformation of the heart discussed by Hunter in his writings is that found in the heart of a boy in his fourteenth year whom he saw with Dr. Poultney. The heart showed a typical interventricular foramen associated with that conditon of pulmonary stenosis already described in these lectures as due to an arrest in the development of the infundibulum of the right ventricle. In the majority of such cases (85-90 per cent.) an interventricular foramen is present. Hunter regarded the obstruction at the entrance to the pulmonary artery as the cause of

the interventricular foramen; Meckel, on the other hand, regarded the fora [illegible] as a sequence. [illegible] which of these tw [illegible] to Hunter's sugge [illegible]

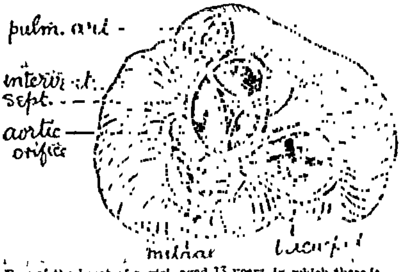
The boundarie [illegible] foramen are shown in a heart represented in Figs. 24 and 25. The right ventricle and atrophied infundibulum below the pulmonary artery are laid open in Fig. 24. The lower margin of the foramen is formed by the interventricular septum; the posterior boundary is formed by a band of fibrous tissue which is situated just below the non-coronary cusp of the aorta and derived from the mass of fibrous tissue formed out of the endocardial cushions. The upper boundary, cut across [illegible] of the aorta, is formed by [illegible] while the anterior margin [illegible] ptum. Thus the interventricular foramen extends along the upper margin of the interventricular septum from the interbulbar septum in front to the intervalvular or auriculo-ventricular septum, formed out of the endocardial cushions, behind. Its size is extremely variable; usually it is about 8 × 12 millimetres, but it may be little more than a pinhole or large enough to take [illegible] quence of events [illegible] interventricular [illegible] that the foramen [illegible] s become opened [illegible] very early in the [illegible] that its closure *depends on the full development of the infundibulum.* [illegible] om, an examination of the heart in [illegible] of the bulbus cavity to form the [illegible] most important part in its closure. [illegible] "4" marks the right infundibular [illegible] ings from the interbulbar septum. It will be apparent that as the infundibulum expands this great band of musculature is thrown across and helps to occlude the interventricular foramen. The occlusion is completed by the fusion of the endocardial cushion which lines the margin of the foramen. The tissue of this endocardial cushion forms the substance of the pars membranacea septi—the curtain which closes the interventricular foramen.

FIG. 24.



Heart of a boy, aged six years, with right ventricle and aorta [illegible] 8, left ventricle, 9, right auricle.

FIG 25.



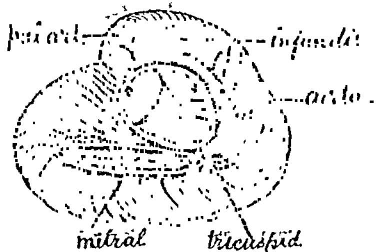
Base of the heart of a girl, aged 13 years, in which there is arrest of the infundibulum with large interventricular foramen. The position of the aortic valves is shown and the subdivision of the aortic orifice by the upper margin of the interventricular septum.

The effect of an interventricular foramen on the action of the heart.—The functional significance of an interventricular foramen is best realised by such a view of the heart as is represented in Fig. 25. It is from the heart of a girl, aged 13 [illegible] partially opened up. [illegible] septum is seen to [illegible] ne-third of it being in communication with the right ventricle, two-thirds with the left. The body of the right ventricle discharged its blood by two orifices: (1) a small part into the constricted infundibulum; and (2) a much larger part into the aorta. The walls of the body of the ventricle are hypertrophied so as to be able to compete on equal terms with the left ventricle *in supplying the body with blood.*

It is difficult to account for those comparatively rare cases where an interventricular foramen is present, yet the hearts seem otherwise perfectly formed. I have seen nine hearts of this kind. In all the foramen was of comparatively small size and had a membranous margin. The theory I have advanced, that the expansion of the infundibulum leads to the closure of the interventricular foramen, will not account for these cases. This class of hearts requires further study.

Irregular interventricular foramina.—Amongst the specimens examined for the purpose of these lectures there were four in wh [illegible] by irregular [illegible] inal muscular [illegible] ned unobliterated (Fig. 19).

FIG. 26.



Base of a heart in which there are (1) stenosis of the right auriculo-ventricular opening; (2) suppression of the body of the right ventricle, and (3) development of the infundibulum of the right ventricle. The common ventricle is really the left; the auriculo-ventricular bundle is seen on the right lateral wall of the ventricle.

Atrophy of left auricle.—The older writers on malformation in the heart endeavoured to utilise the classification *employed in comparative anatomy and* divide abnormal hearts into two-chambered and three-chambered hearts. A two-chambered human heart I have never seen; in three hearts of stillborn children, where there was complete stenosis of the mitral orifice, the left auricle was so small that it might easily have escaped detection; I have never seen the interauricular septum completely absent.

Hearts with one ventricle.—Amongst the malformed hearts which are said to have a common ventricle there are really three kinds: (1) those in which the interventricular septum is so little developed, or, to put it differently, the interventricular foramen is so large that the two ventricles are rightly said to form one char [illegible] the right ventricle is suppressed [illegible] to the right side of the heart; [illegible] left ventricle is suppressed by [illegible] the left wall of

The murmurs that develop during an attack of rheumatism are usually confined to the mitral area when there has been no previous valvular disease. In relation to the cardiac rhythm they are, first, a late diastolic murmur, and, secondly, a systolic murmur. These two bruits, as a rule, do not occur together and the diastolic is often replaced by a systolic in the later stages of an attack. They are both temporary murmurs, although the systolic may last until the development of a permanent systolic bruit due to deformity of the mitral valve from contraction after valvulitis. Neither of these murmurs can be explained by an active inflammation of the valve, since there is no reason why this should hamper the functions of the valve in any way. Personally, I consider that Dr. Coombs's explanation of the mode of production of these murmurs is in the main correct, but I differ from him in certain details.

Taking first the systolic bruit, its position and character are those of a murmur due to a regurgitation through the mitral valve. An inflammation of the cusps of the valve could not render it incompetent until the cusps were deformed by the subsequent contraction, and this systolic murmur is often one of the earliest phenomena of rheumatism. Dilatation of the left ventricle may lead to incompetence of the valve, but considerable dilatation is often found without a murmur, and even in rheumatism a murmur often develops, while there is but little dilatation. Hence, as Dr. Coombs rightly insists, the murmur must be caused by widening of the orifice by myocardial atony, and this is confirmed by the enlargement of the mitral ring that is found post mortem. To make this statement is, however, not sufficient: an explanation is required as to how such a widening is anatomically and pathologically possible. The cardiac openings are surrounded by fibrous rings and are closed completely by the cusps of the valves, provided the openings are sufficiently small. The pulmonary and aortic orifices do not vary much in size, but the tricuspid and the mitral can vary to a very considerable extent. The reason for this is that there is, besides the fibrous ring, a band of circularly disposed muscle fibres around each of the auriculo-ventricular openings and each of these orifices is dependent for its size on the tone of the circular muscle. The size, of course, increases with loss of tone and diminishes with increase of tone. It is by no means necessary that the tone of these muscle rings should be in exactly the same condition as the rest of the cardiac muscle; in fact, under normal conditions tone is probably greater here than elsewhere. The sphincters of the valves, if one may call them so, may also have their tone altered apart from the general cardiac muscle—e.g., by the action of nervous influences. The valvular cusps are so arranged that they can still meet and close the mitral opening with a moderate widening, so that considerable dilatation of the left ventricle may take place without incompetence of the valve. The capacity of the ventricle, too, increases in dilatation more rapidly than the area of its walls, so that a decided increase of the [illegible] icle would be associated with a very [illegible] tral orifice.

[illegible] arrangements it is evident that the main factor in the production of mitral incompetence early in rheumatism is a loss of tone in the mitral sphincter. Are there any pathological reasons for a loss of tone in this sphincter as apart from a general alteration of muscle tone? We are informed that in rheumatism inflammatory nodules tend to develop, especially near the mitral ring and near the root of the aorta. In such nodules toxins would be elaborated (whether formic acid or others) and the lymph of the part would contain these toxins. Hence the muscle fibres of the mitral sphincter would be bathed in toxins, the special action of which is to diminish tonicity, while the rest of the cardiac muscle would be much less severely poisoned since the toxins must be absorbed into the general circulation in order to reach any fibres that are not in close proximity to the nodules. Thus in any rheumatic myocarditis an early loss of tone in the sphincter of the mitral valve would be expected with the development of a regurgitant murmur. Nodules tend also to be formed near the root of the aorta; but the aorta has no sphincter and so no change is produced in the size of the aortic opening by the local inflammation.

The other murmur that is produced during an attack of rheumatic fever is also heard at the apex but is diastolic in time. This murmur is soft and blowing in character, and has not the rough crescendo quality of the bruit of mitral stenosis. It could hardly be caused by the minute vegetations that are found on the valve post mortem, while the hypothesis that the valvular cusps become stiffened and so obstruct the blood has very little evidence in its support. The murmur is only temporary and seems to have nothing to do with the development of a genuine stenosis of the valve. A similar murmur may, however, be heard in mitral stenosis, especially in the later stages, when the left auricle fails in its duty of driving blood into the ventricle. In mitral stenosis this murmur is almost certainly due to the aspiration of blood from the auricle through the constricted mitral by the dilating ventricle. The suggestion of Dr. Coombs, that the diastolic murmur of rheumatism is due to the same cause, seems to me to be a sound one. The dilatation of the ventricle produced by the rheumatic poison would lead to a comparative narrowing of the mitral valve, since this is not stretched in proportion to the increase of the ventricular capacity, provided that the tone of the mitral sphincter is not specially damaged. The aspiration of the dilated ventricle through this comparatively narrow orifice would cause the bruit. The aspirating power of the dilating ventricle depends on the strength of its preceding contraction or, in other words, on the contractility of the muscle. The contractility is often damaged in rheumatism but not to the same extent as the tonicity, and the two properties are not affected in proportion to one another. Thus in a case of rheumatic dilatation of the heart it will depend on the extent of the damage to the contractility whether the diastolic bruit is heard or not. This conclusion, founded on theoretical considerations, accords with my vague recollections of clinical cases, but the point requires extended study at the bedside. It is of interest that a diastolic murmur does not develop in the dilatation of the heart in diphtheria; the diphtheritic poison mainly attacks contractility and only to a lesser extent tonicity.

While being convinced that the diastolic murmur is produced in the manner here described I cannot agree that the murmur has anything to do with inflammation of the cardiac muscle. Indeed, I should take it as a sign that myocarditis was absent and that there was merely poisoning of the muscle fibres. I have explained how myocarditis would be expected to result in a loss of tone in the mitral sphincter. Such a loss of tone, even if insufficient to cause a systolic murmur, would be quite enough to prevent a diastolic one from being developed, since the theoretical explanation of the latter presupposes a comparative stenosis of the mitral valve with dilatation of the ventricle.

Death in a first attack of [illegible] very uncommon apart from hyperpyrexia, but [illegible] may fatally affect a heart that [illegible] disease or pericardial adhesions [illegible] previously injured by poisoning [illegible] of rheumatic myocarditis are [illegible] to lead to a fatal issue, and the main factor in the production of a fatal cardiac failure seems to be action of the toxin on the muscle cells. In this respect rheumatism is like other specific diseases—for instance, diphtheria. In both diseases fatty infiltration of the muscle fibres has been described, but a poisoned cell need show n[illegible] change from the action of the poison, and the [illegible]ubt as to the pathological significance [illegible] It is evident that the action of the [illegible] severe than is the case with diphtheria. In rheumatism evidence of cardiac poisoning in the form of dilatation is very common, but death is very rare, while in diphtheria death is frequent when there is any dilatation to show that the heart is affected. The proba[illegible] of this is that the different poisons of [illegible]ct the several properties of the cardiac muscle to different extents, and that the poison of rheumatism mainly attacks the tonicity, while that of diphtheria specially implicates the contractility.

In conclusion, it may be emphasised that, while pericarditis gives the usual well-recognised signs of its presence, recent endocarditis causes no physical signs whatever. Affections of the myocardium in [illegible] may be divided into the inflammatory and the [illegible]y lesions cause a loss of tone in the mus[illegible] the mitral valve allowing of mitral regurgitation. Thus an apical systolic murmur is the sign of rheumatic myocarditis, and is, indeed, the only sign of inflammation of the heart apart from pericarditis. In the majority of cases the presence of such a systolic bruit is diagnostic of myocarditis, but in a small minority a regurgitant murmur may result from general dilatation without any inflammation. Poisoning of the heart muscle in rheumatism causes a general dilatation of the heart and sometimes a mitral diastolic murmur. Dilatation may or may not be associated with inflammation of the myocardium, but the diastolic murmur may be taken to imply an absence of myocarditis at the time it is heard. As far as the immediate welfare of the patient is concerned the toxic action of rheumatism is more important than the inflammatory, since it is to the consequent failure of tonicity and contractility that death during an attack is due. For his future welfare the inflammatory lesions become of chief account. Myocarditis is probably always associated with endocarditis, so that there is danger of permanent damage to a valve and the inflammation in the muscle itself may lead to such local damage *that tone is never regained, leaving a permanent* widening of the orifice. It is probable that the muscle may sometimes completely recover both from the poisoning and the inflammation, but in other cases the muscle never again becomes healthy after their disappearance. Such occasional permanent damage to the muscle by the toxin would explain the different behaviour of different hearts after rheumatism. In some hypertrophy readily takes place and there is a ready compensation for valvular lesion, whilst others rapidly fail. Again, some hearts respond readily to drugs like digitalis, whilst others are feebly, or not at all, affected.

It would appear from the foregoing considerations that there has been a tendency to exaggerate the importance of myocarditis in rheumatism. The more pressing danger [illegible] responsible for the only physical sign of cardiac inflammation apart from pericarditis, and cardiac inflammation is the cause of post-rheumatic valvular disease. It is probable, too, that the inflammation in the muscle assists to some extent in the production of a permanent incompetency of the mitral valve, and may also, in association with the toxin, be of account in permanently damaging the muscle, so that it may fail to "compensate" for valvular lesions and not be healthy enough to respond to the action of drugs.

Upper Berkeley-street, W.

FIVE CASES OF TUMOUR OF THE LARGE INTESTINE SIMULATING DISEASE OF THE UTERUS OR UTERINE APPENDAGES.

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THE following cases illustrate how closely tumours of the large intestine in women may simulate disease of the uterus or its appendages.

CASE 1. *Inflammatory tumour of the cæcum simulating a uterine myoma.*—Two years ago I assisted Dr. William Duncan to operate on an elderly lady who presented a large abdominal tumour centrally placed, defined in outline, solid to the touch, and dull on percussion. On vaginal examination it appeared to be attached to the top of the uterus and to be continuous with it. The principal feature of the case was the tumour, which had existed for a considerable time. Pain was complained of also. No menstrual symptoms were present but the patient had passed the climacteric. The general appearance and feel of the mass suggested strongly [illegible] species of degeneration. [illegible] middle line the mass was [illegible] of a "cake" of much- [illegible] losely adherent in front to [illegible] at its lower part to the top [illegible] Several small collections [illegible] and the abdominal wall. When the omentum had been separated with considerable difficulty it was found that the underlying portion of the tumour was composed of the cæcum and terminal four inches of the ileum. The wall of the bowel was enormously [illegible] were firmly conjoined [illegible] of malignant disease [illegible] the involved intestine having been separated I assisted Dr. Duncan to resect the whole cæcum together with five inches of the adjacent ileum. The lower end of the ascending colon was closed and the cut end of the small intestine was implanted into its inner side, about one inch above the point of occlusion.

The patient subsequently developed a fæcal fistula with much suppuration in the wound, but eventually recovered and is at the present time, I understand, in very good health.

Microscopical investigation of the parts removed showed that the condition was solely due to an immense inflammatory sclerotic thickening of the intestinal wall. The *appendix appeared to have been merged in the general* tumour, at all events it could not be separately defined. The origin of the condition was therefore not determinable.

CASE 2. [illegible] Chelsea Hospital for Women last September, giving a history of abdominal pain and wasting for the last four months. The bowels had been very constipated and much pain on micturition was complained of. On examination the abdomen was much distended by an irregular mass of variable consistency occupying its lower left quadrant. The flanks were dull and there was evidence of a considerable quantity of free fluid in the abdominal cavity. On vaginal examination the mass could be felt apparently arising from the region of the left ovary.

I made a median subumbilical incision, and on opening the peritoneum a quantity of ascitic fluid escaped. A mass of adherent omentum then presented which was attached at its lower part to the back of the uterus and left broad ligament. When this had been separated it was found to screen a tumour in the pelvis of considerable size, which was composed of adherent portions of the transverse colon and sigmoid flexure. On closer investigation it was seen to be due to a primary carcinoma of the middle of the transverse colon which had "sagged down" into the pelvis, adhered to the sigmoid flexure, infiltrated it, and perforated into it so that on separating the two pieces of gut a hole was left in either portion at the site of the short circuiting. I therefore first resected the diseased portion of the transverse colon and performed an end-to-end anastomosis of the cut ends and then similarly treated the infiltrated portion of [illegible]

This patient made [illegible] the present time is [illegible] the operation, and without any sign of recurrence. The growth was proved to be a columnar-celled carcinoma.

CASE 3. *Carcinoma of the sigmoid colon simulating an ovarian dermoid cyst.*—On the same afternoon in which I operated on the foregoing case, and also at the Chelsea Hospital for Women, I opened the abdomen of a patient, aged 27 years, who presented a rounded, centrally placed tumour rising midway between the pubes and umbilicus, and situated in front of the uterus and between it and the bladder. Her history was one of severe pain on micturition and pain in the back extending over three months. She had had occasional attacks of diarrhœa. The rounded contour, the position of the tumour, its semi-solid consistency, and the age of the patient caused a pre-operative diagnosis of dermoid cyst of the ovary to be made.

I made a central incision over the tumour and found it to consist superficially of adherent thickened omentum, under and conjoined with which was a loop of the sigmoid colon containing a large annular growth. The bowel above the structure was much thickened and distended with fæcal masses. The whole mass lay between the uterus and bladder, filling up the utero-vesical pouch and was very adherent, especially to the bladder. Having freed the bowel and cut off the diseased omentum I resected some eight inches of the bowel, including the growth, and per- [illegible] anastomosis having previously expressed [illegible] cal accumulation that it con-

The patient made an uninterrupted recovery. The growth proved to be a columnar-celled carcinoma.

CASE 4. *Carcinoma of the sigmoid simulating disease of the right uterine appendage.*—This case I also operated upon at the Chelsea Hospital for Women in September, 1908. Her age was 31 years, and her symptoms, which consisted of pain in the lower abdomen and back, had existed for three months. For the first two months of this period she had had frequent attacks of diarrhœa, but for the last month this had ceased and she had become very constipated. On abdominal examination there were tenderness and an ill-defined sense of swelling to the right of the middle line, and low down in the pelvis per vaginam a well-marked mass could be felt filling the right half of the pelvis and pushing the uterus forwards and to the left. A provisional diagnosis of inflammatory disease of the right ovary and tube was made.

When I opened the abdomen I found the tumour to consist of a loop of sigmoid colon at the flexure of which a large annular growth was situated. This was matted over with adherent small intestine and omentum and the whole conglomerate mass was attached to the back of the right broad ligament and the right lateral pelvic wall. The ovary and tube on either side were normal. Having separated the diseased intestine and removed the omentum, I resected the whole loop containing the growth together with some enlarged glands. The upper end of the bowel was then emptied of a large quantity of retained scybalæ and an end-to-end anastomosis was performed.

This patient also made an excellent recovery. The growth proved to be a columnar-celled carcinoma. At the present time the patient is quite well, I believe.

CASE 5. *Carcinoma of the sigmoid with secondary growth in the anterior rectal wall simulating a malignant ovarian tumour.*—In 1909 a patient aged 54 years was admitted into the Middlesex Hospital under my care as a case of malignant ovarian tumour. She was a miserably emaciated-looking woman with a degree of general abdominal distension but with no defined tumour to be felt from above. On vaginal examination a large mass lay between the back of the uterus and the front of the rectum and was apparently adherent to both. On rectal examination the tumour could be felt pressing on to the anterior rectal wall, which it had evidently superficially involved, but the mucosa of the bowel was unaffected. The history of the case was one of abdominal and pelvic pain for some months. For the last three weeks she had had diarrhœa.

I opened the abdomen in the middle line and found that the tumour was screened by a quantity of adherent omentum. It was apparently springing from the back of the right broad ligament, and I thought at first that I was dealing with some tumour of the ovary belonging to that side. I began to separate it, when a quantity of fæcal matter escaped into the pelvis and proclaimed the mass to be connected with the intestine. On separating it into its constituent parts and removing the diseased omentum I found it to be a large carcinomatous mass in the upper part of the sigmoid colon which had gravitated into the pouch of Douglas and then adhered to the anterior rectal wall which it had begun to infiltrate. I had torn through this mass while separating it from the rectum. I therefore resected the entire sigmoid colon, together with the upper part of the rectum, so as to include both areas of disease. Fortunately, owing to the extremely relaxed condition of the patient's mesenteries, I was able to pull the lower end of the descending colon down to the bottom of Douglas's pouch, and, obtaining sufficient free margin of the upper end of the cut rectum by freeing it from its peritoneal connexions and pulling it up, I was able to effect an end-to-end anastomosis. Before doing so, I emptied, as before, the colon of its retained fæcal matter, and as a considerable quantity of fæces had escaped into the pelvis owing to my tearing through the growth when separating it, the pelvis was carefully washed out with saline solution before I closed the abdominal wound.

The patient had a somewhat prolonged convalescence. The abdominal wound suppurated badly, but the line of anastomosis remained watertight although for some time she had a fæculo-purulent discharge from the anus. She left the hospital eventually in a very satisfactory state. The growth was proved to be a columnar-celled carcinoma.

These five cases are instructive from several points of view. The effect of gravity on tumours of the large intestine is seen to be very marked. In all of these patients the tumour mass had caused the affected portion of bowel to gravitate downwards into the pelvis, to certain of the structures contained in which it had subsequently adhered. In Cases 2 and 5 this adhesion had occurred between the diseased bowel and the healthy bowel below it. In Case 2 actual short-circuiting had taken place and in Case 5 was about to take place. In Case 1 adhesion had occurred to the top of the uterus, in Case 3 to the front of the uterus and bladder, and in Case 4 to the back of the right broad ligament. It is therefore apparent that in growths of the large intestine one must not expect to find the position of the tumour necessarily corresponding with the normal anatomical position of the portion of gut involved, and that it is not safe to exclude from the diagnosis any portion of the large intestine merely on account of the position of the mass to be felt.

Another important fact illustrated by these cases is the large size of the palpable mass that may be produced as a result of a growth of the wall of the large intestine. This mass is a *conglomerate*—i.e., it is made up of several constituents. First amongst these is the omentum, which early becomes adherent and thickened. This is augmented by fusion of the primary growth with neighbouring coils of gut, swollen appendices epiploicæ, the uterine appendages or the uterus itself. Finally, the whole becomes rounded off by collections of organised peritoneal exudate, and the result is a tumour of large dimensions of which the primary disease forms but a small part.

When such a mass occupies the pelvis the simulation of disease of the uterus or uterine appendages may be, as these cases show, very close indeed, especially in the absence of symptoms pointing strongly to the bowel. Slight intestinal symptoms, such as moderate diarrhœa or constipation, are so commonly met with in *bonâ-fide* disease of the female genital organs as to be of little value in the differential diagnosis.

It will be seen that in four out of the five cases end-to-end anastomosis was performed (in Case 2 in two places). I am aware that certain authorities favour lateral anastomosis in the case of the large intestine on account of the larger aperture of communication that can be effected between the anastomosed segments of the bowel. End-to-end union has, however, in my hands proved very satisfactory. It certainly has the advantage over lateral junction of reducing the suture line to its smallest limit and in the large intestine, where so free an anastomosis exists between the vessels of the meso-colon, the danger of anæmic necrosis of the sutured ends is very slight.

I have always used three layers of sutures: the first, a continuous suture through mucosa and muscle; the second, a continuous suture through muscle and peritoneum; and the third, a series of interrupted Lembert sutures picking up the peritoneum only. No doubt this involves the inturning of a considerable portion of the bowel wall, much of which subsequently sloughs off, but this is of small importance compared with rendering the line of junction watertight. I attach great importance to the emptying of the upper bowel before performing the anastomosis. It may be objected that this proceeding increases the risk of infecting the operation area, but I am of opinion that healthy fæcal matter, at all events, is very slightly septic, and that if the parts exposed by the incision are carefully packed off with sterilised gauze before the process and the bowel end thoroughly washed with saline solution after it, it may be carried out with great advantage to the patient.

Harley-street, W.

A CASE OF HENOCH'S PURPURA ASSOCIATED WITH ANGIONEUROTIC ŒDEMA.

BY ALEXANDER DON, M.A., M.B., C.M. ABERD.,
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A BOY, aged 8½ years, whom I saw on Feb. 8th, 1908, had been ailing for over a fortnight, but had always been able to be at school. His appetite had been very good, but he had swelling of the left knee and ankle and dysentery. A week previously there had been a swelling over the dorsum of the right foot. The left knee next became *painful*, and on examination his mother found that it was swollen. The elbow then became sore. This was his condition when I first saw him. The knee and elbow contained fluid. The skin around both looked as if bruised, and on different parts of the body were what seemed like old bruises, especially a mark over the right trochanter major. Closer examination showed that many of these were really subcutaneous hæmorrhages. The patches varied in size from sixpenny-pieces to half-crowns, were irregular in outline, and were in all stages of absorption, some being bright red, others darker, and some only little more than a greenish-yellow stain. Other spots resembled fleabites and did not show the changes mentioned as they faded. One of these was on the right cheek, and others over the trunk below the umbilicus and on both legs, feet, and arms. These spots were distinctly worse on the legs and forearms. There had been diarrhœa for a week, foul-smelling and dysenteric—i.e., containing blood and mucus. There was no pain in the abdomen. The temperature was 99° F. and the pulse was 100 per minute. There was no cardiac symptom nor albumin. He was put on powders, one four-hourly, containing calomel ½ gr., salol 2 gr., and pulv. ipecac. 1 gr. Next day, the 9th, the penis was œdematous with [illegible] It was quite free from pain and [illegible] at the trunk. The knee was [illegible] good deal. There were some [illegible] 10th the whole scrotum was livid red and œdematous, but the point of the penis was less swollen. The elbow was quite better, but there was a good deal of greenish-yellow staining down the forearm. The right hip had several erythematous patches, raised up like true urticaria, but not itchy. The diarrhœa was less frequent. The temperature was 99·6° and the pulse was 100. A sample of fæces was taken for examination. Professor Sutherland reported on this as follows:—

> A. Films made directly from the specimen are examined in the [illegible] after fixing with corrosive [illegible] and eosin. Films are also [illegible]sin, and by Gram's method. The following organisms are [illegible]

The œdema gradually disappeared from the penis and [illegible] The knee and elbow on the [illegible] began to rise on the front of [illegible] on firm pressure. There was [illegible] œdema. On Feb. 12th the fæces were again sent for examination, and the report is as *follows*:—

> A. An examination similar to the last is made No amœbæ are found. The organisms are less abundant. B. coli is present in distinctly smaller numbers The larger Gram positive bacillus is only present in very small amount. The majority of organisms are cocci—often in long chains Examination for tubercle bacillus is again negative. B. Abundant growths are obtained on agar of the large Gram-positive bacillus The B. coli and the cocci are apparently overgrown. The larger number of fatty catarrhal cells, the abundance of red blood corpuscles, and the scantiness of leucocytes in the material point in the direction of an extensive catarrhal rather than suppurative inflammation of the intestinal tract.

The patch in front of the right elbow increased in size during the next few days and then faded, leaving a greenish-yellow stain. There was great pain of a colicky nature over the descending colon, and a firm sausage-shaped tumour could be made out on palpation, though the patient winced a little and fixed the abdominal muscles on that side. The left knee and elbow were now painlessly moveable. No new hæmorrhages or swellings had appeared. Next morning, the 13th, he was a good deal better, but there was still pain along the descending colon which was less distinctly palpable. There had been no movement of the bowels. After my visit I heard by telephone that he had had a bad attack of diarrhœa with vomiting. He vomited twice, the second time quite green material. The bowels moved almost continuously, 13 or 14 times, and latterly pure blood with great tenesmus. After the last motion he was quite exhausted and dropped off to sleep. I ordered Dover's powder two grains. He slept again after the first dose. His milk was now peptonised. On the 14th he was better, the temperature and pulse being normal. The scrotum was now quite normal except at its most dependent part, where a little œdema still persisted. The only motion was of the muco-sanguineous type, with a good deal of pea-soupy fæces. There had been slight hæmorrhage from the nose. On the 15th the dorsum of the right foot and the ankle were œdematous and pitted on pressure. There was no pain anywhere and he was quite cheerful. On the 16th the right foot was pretty much as before. He complained very much of his back and on examination I found a new œdematous patch right over the centre of the lowest dorsal spines, which were very painful to touch. There had also been some swelling of the right ear, but it had almost disappeared, only a little remaining at the junction of the pinna with the head above. There was a little blood in the stool last night. He seemed much lower to-day. His pulse was feeble and about 130 per minute, but there was no fever. On the 17th [illegible] 96. The patient [illegible] There was no mo[illegible] of the abdomen. The right knee was distended with fluid and the œdema extended up from the foot to the knee. The foot was not now swollen. The patch on the head had spread over the temporal bone, and was well defined and painful to touch. The swelling on the back was just about the same. On the 18th the knee was less painful, and the œdema was up as far as the middle third of the thigh. The greatest change was in the head. What was a small patch of the size of the palm over the right temporal ridge had spread all over the top of the head and down to the other ear, closing the right eye, and down to the supra-orbital ridge of the left. It was only slightly painful now to touch. The pulse was 110 and rather feeble. The heart sounds were quite closed in all areas, but not strong. The back had resumed its normal outline. The bowels had operated four times, once with a little blood. He felt quite comfortable, but was drowsy. On the 19th the pulse was 84 and the temperature was 99°. The swelling of the head had quite changed from where it was on the 18th. The right eye was open, and the left now closed. The swelling had travelled down the back of the head to the neck, and down the face on the right side to the ear, and on the left side to the zygoma. There were a few new spots of purpura over the legs about the knee-joints. The heart gave a slight systolic bruit over the apex. On the 20th the face was still swollen, especially over the cheeks and downwards. The right knee could now be bent slightly. The motions were dark, pea-soupy, with a little blood. He was very hungry. The pulse was still rapid. On the 21st he was much better. There was practically no swelling anywhere except on the left cheek at the angle of the lower jaw. He was feeling very well. The pulse was about 60 per minute, rather irregular, and intermittent. He had only one motion and it was more normal. The right leg was quite better. On the 23rd the stools were formed. The patient was very hungry. He was allowed a little ground rice and jelly. There was still a slight systolic murmur. The urine was very much clearer and there was no albumin. On the 25th the patient was improving. There was some dysentery yesterday, but it has ceased. There was no complaint of any kind except hunger. The improvement continued and he was able to sit up a little by the end of the month. He was advised to continue calomel and salol as disinfectants to the bowel and to prevent recurrence. This he did, and though he has at times felt out of sorts and bilious there has been no outbreak of the old symptoms during the last 14 months.

His personal history contains nothing of importance bearing on his symptoms. He was born in Australia. He had been subject to attacks of biliousness and was operated on for enlarged tonsils two and a half years ago. He was also circumcised, and at that time had an erysipelatous rash all over his body and was seriously ill. He had just then recovered from measles. His father and mother are alive and healthy. There was no history of any blood disease on either side.

This is the second case of angioneurotic œdema associated with purpura which I have met with, the first case[1] being less marked in its distribution and severity. The coexistence of these two symptoms, for one can hardly class them as distinct diseases, is mentioned by Butler,[2] and Osler[3] thinks that both may depend on "some poison—an alkaloid—possibly the result of some faulty chylopoietic metabolism, which in varying doses in different constitutions excites in one urticaria, in a second peliosis rheumatica, and in a third in the lumbar region, sensation of dragging in the rectum, and pain and straining at stool. The bowels never acted without purgatives. Examination of the rectum disclosed a firm thick band high up in the bowel. The patient gave a history of frequent attacks of diarrhœa with blood 10 years ago. There was no history of syphilis. More than six months ago she underwent an operation for external and internal hæmorrhoids without relief to the symptoms. Dilatation of the stricture had been done twice a week and this caused much pain but gave no relief. After treatment for four weeks by injections of fibrolysin every second day and occasional passage of a dilator the bowels have acted naturally without drugs, pain and discomfort have disappeared, and the instrument does not cause much inconvenience. The patient has gained weight and now describes living as a pleasure.

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[1] Don: The Practitioner, June, 1908.

[2] Butler's Diagnostics of Internal Medicine.

[3] Osler. American Journal of Medical Science.

CASE 3. *Dupuytren's contraction.*—A man, aged 64 years, had had contraction of the palmar fascia in both hands for 20 years. The contraction was so marked in the right hand that the index and middle fingers were fixed closely to the palm and a pen handle could be with difficulty passed between the contracted fingers and the palmar surface. The bands of fascia stood up as hard, tight cords which were quite inelastic. Treatment three times a week resulted in softening of the hands and some elasticity being imparted to the cords. Passive movement and massage were also employed, and after 30 injections he can now extend and flex the fingers almost to the normal extent and the stiffness and swelling of the hands have disappeared, while the fascial bands have become soft and elastic.

CASE 3. *Chronic rheumatoid arthritis.*—A married woman, aged 47 years, for several years had suffered from this complaint. She was unable to stand on account of the pains in the knees, which could not be flexed without pain, and grating and swelling were marked. She had been practically bedridden for 12 months prior to the treatment. Various remedies and methods had been employed with slight temporary relief. After 12 injections the pain was much lessened and creaking and swelling disappeared, while the knees could be flexed voluntarily. After 30 injections had been given the pains also disappeared and she was able to walk about her room without artificial aid. She had previously used crutches for a fortnight. Her general condition was much improved. During the last five weeks treatment has been given once a week and she now can walk slowly with little discomfort, and she states that each day she feels herself becoming stronger in the knees.

CASE 4. *Stricture of the urethra.*—A man, aged 46 years, had suffered from double stricture for 20 years. Eight years ago urethrotomy had been performed without good result. False passages had been made by catheterisations and cicatrices could be easily felt. No. 5 (English) with difficulty was passed through the smaller stricture. Injections of fibrolysin were given twice a week and gradual dilatation was practised. The anterior stricture allowed passage of No. 12 at the end of three weeks, and two weeks later No. 12 was passed through both strictures Frequency of micturition has been relieved and the patient has gained 12 pounds in weight. This patient had been treated energetically for syphilitic orchitis for some months ten years ago without avail, and one testicle had been removed. At the beginning of treatment by fibrolysin there was a nodular gummatous swelling in the remaining testicle. This became soft and has now almost disappeared.

CASE 5. *Gastric adhesion.*—A married woman, aged 29 years, suffered for five years from vomiting and pains in the left hypochondrium. She was anæmic and had vomited blood on several occasions. A large meal increased the pain and movements like stretching or reaching caused pain in the left side. Examination of the gastric contents gave slight hyperchlorhydria. Treatment by fibrolysin injections and massage of the stomach after a bulky meal for three weeks resulted in disappearance of the pains with increase in appetite and improvement in the anæmic condition.

CASE 6. *Fibrous adhesions of the knee-joint.*—A man, aged 29 years, had gonorrhœa nine months before, complicated by synovitis of the right knee, which remained stiff, painful, and swollen. Massage, hot air, and general treatment had no good effect. Fibrolysin was injected for two months and massage and passive movements were applied to the joint. The thickening round the joint became lessened and movement has been restored, though the knee cannot yet be fully flexed. Pain disappeared after six injections.

From the foregoing it will be seen that fibrolysin is apparently indicated in any pathological state having fibrosis as its basis. The softening of the fibrous tissue allows of manipulation and stretching. The injection of the drug *of itself* will *not* result in local benefit in my opinion. It should be *supplemented* by massage and other physical measures. The remarkable general improvement in health in all cases is noteworthy, as well as the advantages which patients may derive in cases that have hitherto been regarded as hopeless. Absorption is fairly rapid after intramuscular injection in adults of middle age, and in one case, that of a man aged 77 years, the taste of the drug could be detected a quarter of an hour after injection. In this case, too, the skin became soft and pliable and the health much improved. Sufficient time has not elapsed to allow one to form an estimate of the permanency or otherwise of the good results obtained. In the case of urethral stricture so far there has been no tendency to recontraction. I purpose keeping cases under observation so that later a further communication may be made on the subject.

Melbourne.

AN UNUSUAL TYPE OF STOMATITIS IN AN INFANT.

BY A. H. BREHAUT, B.A., M.D., B.C. CANTAB.,
HONORARY MEDICAL OFFICER TO THE VICTORIA COTTAGE HOSPITAL, GUERNSEY.

THE following case of stomatitis occurring in an infant of four months presents unusual features and may be worth recording. Henoch in his lectures on Diseases of Children mentions two varieties of se [illegible] and gangrenous. The former is [illegible] with teething; the latter usually occurs as a sequel to one of the acute infectious diseases amidst unhygienic surroundings. In both cases the mucous membrane is first involved; sometimes the ulcerative type develops into the more severe, and usually fatal, gangrenous type.

In the present case the age of the patient—four months—is unusual; the severer types of stomatitis occur especially between the ages of two and 12 years.[1] Primary dentition had not as yet set in; there was no history of any acute infectious disease or of mercurialism; the surroundings were not such as to call for censure. The case occurred on a farm and there was no history of illness among the cattle.[2] The child was bottle-fed and had no evidence of rickets or scurvy; he was anæmic but was well grown and sturdy. The acute onset and [illegible] showed the infection, whatever its [illegible] and not constitutional in origin. [illegible] so placed as to be able to take cultures of any micro-organisms which may have been present.

The patient, aged four months, was seen on April 30th, 1908. The history as obtained was that on the previous day (the 29th) he had been ill or very bad tempered all day; in the evening it was noticed that the cheek was a little swollen; by the next morning (the 30th) this swelling had undergone considerable increase in size. On examination the left cheek was seen to be very swollen and the skin was shiny; the swelling was not localised. The cheek was very hard and tense, no pitting could be obtained, it was extremely tender, and a slight touch produced a shriek. The inside of the cheek was dusky, and about half-way back on a level with the alveolar border of the lower jaw there was a small patch of about the size of a No. 4 shot, dusky grey in colour, which had the appearance of threatening gangrene. There was no specific odour attached to the breath, but it was foul. The glands in the neck on that side were enlarged and tender; any lateral movement of the head produced pain. The skin of the neck was œdematous as also was that of the scalp, especially over the occipital region. The temperature was 104·6° F. and the pulse was uncountable (probably 160). The diagnosis arrived at was that it was probably a case of early gangrenous stomatitis. Surgical interference was mooted but was refused. Accordingly

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[illegible] ol. i.

2 [illegible]

I ordered a lotion[3] for frequent application to the interior of the cheek, giving at the same time two grains of bromide of potassium every two hours for six hours, subsequently every four hours. On the next day the cheek was not so swollen or tense, but the eye was closed by the œdematous lids. The inside of the cheek had lost its dusky colour; the dusky grey spot had disappeared, its site being occupied by a small zone of hyperæmia. The breath was not so foul. The cheek could bear a moderate amount of manipulation; the glands in the neck were not so tender, and the œdema of the scalp was not so marked. A slight cough was present but there were no physical signs. The temperature was 103°. The child was taking a little milk. On May 2nd the temperature was normal, the cheek not so swollen, the œdema of the eyelids was disappearing, while [illegible] The child was taking his [illegible] ching convalescence. By [illegible] of the cheek was like a chronic superficial abscess pointing; there was a localised swelling of about the size of a hazel-nut, the skin over it being congested, but the swelling was solid in character. The child was taking its food well and sleeping well. The swelling gradually diminished in size, and by May 7th the cheek was normal. The child has subsequently remained in good health.

Recovery occurring without any loss of tissue negatives the view that it was a case of gangrenous stomatitis, and I have been unable to find any reference to cases of threatening gangrenous stomatitis undergoing spontaneous cure in the literature at my disposal. There was no evidence of its being a case of ulcerative stomatitis. When first seen it seemed very improbable that such a young child would make a perfect recovery from such an acute infection and in such a short space of time.

Guernsey.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SUPPRESSION OF URINE SIMULATING CALCULUS ANURIA.

By Preston King, M.D. Cantab.,
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In recording this case I wish in the first place to thank Dr. J. Lindsay for his clinical notes and Dr. R. Waterhouse for his help at the post-mortem examination and in the preparation of the microscope slides.

The patient, a spare, healthy looking man, aged 58 years, was admitted into the Royal Mineral Water Hospital, Bath, on August 21st, 1908. He was suffering from "rheumatism" in the wrist and pain and stiffness in the right hip, the latter being the result of an accident 12 months before. The heart and lungs were normal, and the urine had a specific gravity of 1015 and was free from albumin. Nothing occurred to call special attention to his case until he had been in the hospital a month. Then on Sept. 22nd he had a sudden attack of epigastric pain, followed by vomiting. On the next morning he seemed much better and, except for a little tenderness on palpation of the left kidney, nothing abnormal could be found, but he said that he had passed no urine since the attack of pain on the previous afternoon. The bladder seemed empty and this condition was confirmed by the passing of a catheter. More careful inquiries were now made into his past history, but beyond remembering that about ten years ago he had for a few weeks an attack of frequent micturition at a time "when his nerves were out of order," he could tell us nothing to throw light upon his case. He had had no urinary troubles since and at no time had there been any symptoms pointing to stone. From this time onward, until his death on Sept. 29th, there was an absolute suppression of urine.

The tenderness over the left kidney seemed to point to the fact that there, from whatever cause, was the seat of the trouble. Was that kidney blocked by a calculus? And, if so, what was the other kidney doing? Were its functions suspended through reflex nervous agencies? Or was it non-existent? The usual treatment for suppression having been tried without success, I asked Mr. R. J. H. Scott to see the patient with me with a view to operation. This he kindly did, but after consultation it was decided not to operate, and the event proved that surgery would only have hastened the natural issue. There was a little muscular twitching the day before the patient died, and he was sick again, but except for this there had been an entire absence of symptoms, and I had found it very difficult to make his friends understand the serious condition he was in. There was no uræmic smell in his breath or skin, and his mind remained perfectly clear up to within five hours of his death.

At the post-mortem examination the bladder was empty and contracted. The right kidney was, for all practical purposes, absent, being represented by a small thin-walled irregular cyst containing some clear fluid, and its ureter was a solid cord. The left kidney was enlarged, weighing seven ounces, and there were many small cysts on its surface containing a turbid yellow fluid. On section it was engorged, the capsule stripped readily, and the pelvis was injected. There was no calculus or other form of obstruction either in the kidney or ureter, which was patent throughout. Microscopically in this kidney the epithelial cells of the convoluted tubes were small and misshapen, their protoplasm granular, and their nuclei indistinct; many tubules contained coagulated material; the glomeruli showed no noteworthy changes. There was much small-celled infiltration around the blood-vessels and an increase of connective tissue in the medulla.

This case is of interest as an instance of non-obstructive suppression occurring in a man with only one kidney, and not followed by the usual symptoms of uræmia. If a stone had been found the case would have been one of calculus anuria, and there would have been nothing especially remarkable about it. In calculus anuria a satisfactory explanation for the absence of uræmic symptoms has, I believe, not been given. Fagge suggested that this might be due to the still healthy kidney changing the chemical constitution of the waste products, and rendering them incapable of producing uræmia, notwithstanding that they are retained in the body. But, however this may be with a healthy kidney, it would hardly seem to explain the absence of symptoms in the present case where the only kidney was diseased.

Bath.

A CASE OF APPENDICITIS PRESENTING SOMEWHAT UNUSUAL FEATURES.

By David Ligat, F.R.C.S. Eng.

A man, aged 40 years, a farm labourer, felt "out of sorts" on July 10th. The next day he felt rather better, but had to give up work on the 12th, when I first saw him. I found him in bed. He was moderately jaundiced. He had not felt sick nor had he vomited. He was not constipated. The fæces were of normal colour. The urine contained bile pigment. The tongue was dry and furred. He denied ever having had previous abdominal pain. The pulse was 120 per minute and the temperature was 102° F. There were [illegible] immediate operation and found the parts in the following condition.

The appendix was about 3½ inches in length and ran vertically upwards on the outer aspect of the ascending colon. It was straight. Its distal third was gangrenous. Pouting from the antimesenteric border of the gangrenous portion was a foreign body. This afterwards proved to be a true enterolith of oval shape and of the size of a bean, quite hard, and giving a metallic ring when allowed to fall on a plate. The meso-appendix was also gangrenous and its vessels were thrombosed. About a teaspoonful of offensive chocolate-coloured pus escaped. There were no limiting adhesions. The appendix and its mesentery were removed and the cavity drained. The pulse and temperature did not fall after operation. There was no general peritonitis, the abdomen remaining flat and soft, and the bowels acting well to calomel on the third day. The appendix region drained well. The patient had no nausea nor was he sick. The jaundice became more intense for the four days following operation, but was decidedly less during the next two days. The tongue remained dry and furred. There was some tenderness over the hepatic area. There were no rigors but the patient was frequently drenched in sweat, the temperature then falling for a short time to 96°, the pulse remaining between 120 and 125. On the fifth day after operation the pulse was 135 and the temperature 103°. The patient died on the following day, six days after operation and the tenth day of the attack. Unfortunately a post-mortem examination was not obtainable, but there can be little doubt that death was due to infective pylephlebitis.

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[3] R. Chlorate of potash, grs. x.; gly. acid bor., ʒ iss.; aq. ad ℥ i.; m. f. lotio.

The following points seem of interest:—1. That although the stone, of relatively considerable size, must have been situated in the appendix for years the patient had never had the sightest abdominal pain in the region of the appendix. 2. That although the pathological changes actually present were so profound, the patient at no period either before or after operation was nauseated, sick, or constipated. 3. The early non-obstructive jaundice. No doubt the portal venous circulation was already infected when I first saw the case on the third day of attack. 4. The fact made apparent at operation that the vessels of the meso-appendix were thrombosed and the mesentery itself gangrenous.

Hastings.

A CASE OF TRANSIENT ATAXY FOLLOWING DIPHTHERIA.

BY H. O. BUTLER, B.A., M.B., B.C. CANTAB.

THE patient was a healthy male, aged 26 years. He had complained of a painful throat the day before I saw him. I then found that his right tonsil and a large portion of the soft palate were covered with a thick greyish-black membrane. Within two hours I injected 8000 units of antitoxin, and in this short space of time I noticed that the membrane had nearly doubled its area. The next morning 2000 units more were injected. This caused rapid disappearance of the membrane at first, but after two days a fresh membrane appeared and spread with nearly the same rapidity as the first. 10,000 units were then injected, and on the following day, as I was doubtful if this was enough, 6000 units more. The membrane rapidly disappeared after this. Bacteriological examination had previously shown that organisms morphologically resembling diphtheria bacilli were present. From the fourth to the eighteenth days vomiting shortly after food and most marked constipation were present. A large variety of pills and enemata had next to no effect; and, rightly or wrongly, the case gave me the idea of a paralysis of a portion at any rate of the small bowel being present. After the eighteenth day, however, this gradually passed off. Five weeks after the onset of the illness he complained of difficulty in swallowing. This, however, was never marked and persisted for about a fortnight, being due to a soft palate paralysis. About this time—that is, about seven weeks after the onset—the patient began to complain of numbness and tingling sensations in the feet, and I found that his gait was typically ataxic. The knee-jerk was present at this time. He rapidly became worse and after seven days was quite unable to do anything by himself owing to the ataxy and loss of muscular sense. It was impossible for him to stand or walk. He could not feed himself, and if I offered to shake hands he would seize the back of his head or his nose. When it was dark and he was unable to see, he was absolutely and completely helpless. This state lasted for a month and then gradually cleared up in another three weeks, with the exception of the right arm which he complained he was unable to use properly. On investigation, however, this appeared to be due to stiffness in the shoulder-joint which lasted on and off for about five months. After the ataxy had persisted for two weeks the knee-jerks disappeared and remained absent for another two weeks and then gradually returned. At no time were there ever any eye changes or wasting of any muscles, and, with the exception of the before mentioned slight difficulty in swallowing and constipation, no motor paralysis. For a few days a slight retardation of painful stimuli on the outer sides of the legs was noticed, but no areas of anæsthesia were found. All this time the patient complained of numbness and tingling in the feet and hands.

Treatment consisted solely in giving a mixture containing strychnine, which was started at the onset of the illness and continued steadily. Whether the large amount of antitoxin given had anything to do with the condition it is not for me to say, but I have noticed an ataxic gait in children before now who have had not more than 6000 units.

The pathology of the condition, I should fancy, is simple: a peripheral neuritis of the afferent nerves accounts for all the symptoms. Dr. Charles R. Box in Vol. XXVIII. of St. Thomas's Hospital Reports gives an excellent account of a typical case, and he gives the following list of references to cases of ataxia following diphtheria, which may be of use:—

Grainger Stewart: Edinburgh Medical Journal, vol. xv., 1870, p. 923. Foot: Dublin Quarterly Journal Medical Science, vol. liv., 1872, p. 176. Kloman: Philadelphia Medical Transactions, vol. iii., 1872-73, p. 183. Kloman: THE LANCET, Dec. 14th, 1872, p. 871. Rumpf: Ataxie nach Diphtheritis, Deutsches Archiv fur Klinische Medicin, Band xx., 1877, p. 120. Schulz: Ataxie nach Diphtheritis, ibid., Band xxiii., p. 360. Rudisch and Jacoby: Archives of Medicine, New York, vol. viii., p 249. Berwald: Berliner Klinische Wochenschrift, Jahr xxi., 1884, p. 796. Buzzard: Harveian Lectures, 1885. Leval-Picquichef: Des Pseudotabes, Lille, 1885, p. 143. Mackenzie: St. Thomas's Hospital Reports, vol. xxi. Haussman: Virchow's Archiv, Band cxv., 1889, p. 534. Morton Prince: Boston Medical and Surgical Journal, 1889. Mott: International Clinics, 1896. Trevelyan: THE LANCET, Nov. 24th, 1900, p. 1482.

Sutton Court-road, W.

A CASE OF ACUTE PULMONARY ŒDEMA.

BY CHARLES E. DENNING, L.R.C.P. & S. IREL., L.M.

IN a paper in THE LANCET of Dec. 7th, 1907, p. 1606, Dr. Leonard Williams drew attention to the condition known as acute pulmonary œdema and elicited reports of several cases, including one by myself which appeared in THE LANCET of July 18th, 1908, p. 158. The following notes relate to another case of this important and interesting condition that has recently come under my care:—

On the afternoon of Feb. 24th I was called to see a man who had arrived that day in Epping. When I visited him, about 5.45 P.M., he was sitting in the dining-room, feeling quite comfortable, having had tea. He explained that he had been ill for a fortnight with pleurisy followed by effusion; that he had been in bed for some days and had then been allowed to get up and to go for short walks; that the day previously his temperature was something over 100° F.; and that he had come home contrary to the wishes of the medical man in attendance upon him. His age was 43 years. I found his temperature to be 100·2°, the pulse 100, and the respirations 24, and I recommended his going to bed in order that I might make a physical examination. I remarked upon a small quantity (about three teaspoonfuls) of what looked like pus which was in a dish beside him and was informed that he had expectorated this only a few minutes before and that he had not previously seen any like it. Whilst speaking to me he began to cough and in a few minutes this cough became incessant and distressing, and he commenced to expectorate mouthfuls of a frothy fluid which seemed to flow continuously into his mouth. From a state of comfort in less than five minutes his condition became most alarming. He had jumped to his feet and, leaning both hands on the table, was spitting out a stream of frothy fluid into a basin in front of him, and he appeared to be almost suffocating. I gave him some brandy and in 15 minutes from the commencement of the attack I injected 1-30th of a grain of strychnine. The coughing and expectoration continuing, in another 15 minutes I gave a second injection of strychnine (1-30th of a grain), atropine (1-100th of a grain), and also some champagne. In five minutes more the attack was over and the patient now lay back in a chair utterly exhausted, collapsed, and cyanosed. The respirations were 40 and the pulse was 120. I feared that he would die at any moment. However, with further stimulants and another injection of strychnine and atropine he rallied, although for some hours his condition was one of extreme exhaustion, the respirations remaining at 40 and the pulse at 120.

In the 35 minutes during which the attack lasted the man had expectorated about a pint of pink-coloured frothy serum, which later separated into a pink fluid beneath a thick layer of minute froth just like yeast. In about an hour the cough returned, although this time it was of quite a different character, and in a few minutes he had expectorated four ounces of pus, similar to that which I had previously remarked upon; and during the next 24 hours over a pint was discharged. This on examination showed the presence of a large number of pneumococci. His heart sounds were normal.

The sequence of events appeared to be, first, a rupture of an empyema into a bronchus just at the time of the expectoration of the small quantity of pus. This was followed by an attack of acute pulmonary œdema, and on recovery from the shock came the free discharge of the empyema. Convalescence was uninterrupted and of no special interest.

A most interesting point appears to me to be the fact that there was no cardiac mischief present.

Epping.

Reviews and Notices of Books.

A Text-book of General Pathology for the Use of Students and Practitioners. By J. MARTIN BEATTIE, M.A. N.Z., M.D. Edin., Professor of Pathology and Bacteriology, University of Sheffield; Honorary Pathologist, Sheffield Royal Infirmary and Royal Hospital; and W. E. CARNEGIE DICKSON, M.D., B.Sc. Edin., F.R.C.P. Edin., Lecturer on Pathological Bacteriology and Senior Assistant to the Professor of Pathology in the University of Edinburgh; Assistant Pathologist, Royal Infirmary, Edinburgh. With 162 illustrations and four coloured plates from original preparations. London: Rebman, Limited. 1908. Pp. 475. Price 17*s.* 6*d.* net.

THE general plan and scope of this new text-book of pathology are based upon the teaching of the Edinburgh School, and in their preface the authors acknowledge their indebtedness to Professor W. S. Greenfield. They give as the *apologia* for their book the fact that some of the fundamental views of that school, though based upon careful experimental investigations and upon extensive experience of human morbid anatomy and histology, have not, in their view, received sufficient attention. As an example of this they refer to infarction. It must be admitted that the description of the results of vascular occlusion given in many text-books is far from satisfactory, and especially is this the case in regard to the conditions which determine the development of anæmic infarction and its relation to the hæmorrhagic variety. The account here given, as the authors admit, is not new, but is based on experiments upon the kidney and spleen in animals. It affirms that infarcts, in these organs at any rate, are at first always red, and that in small infarcts pallor supervenes in a few hours. In regard to the cause of the congestion of infarcts, the theory of reflux from the veins proposed by Cohnheim is negatived, and the view of Litten and others that it is the result of collateral blood-supply is confirmed by experimental data. As a whole, the mechanism of infarction here described appears to us to be clear and intelligible and is not obscured by theoretical speculations.

The book is divided into seven chapters and is copiously and well illustrated, for the most part by reproductions of photographs and micro-photographs of actual specimens. The coloured plates are also well executed and illustrate the microscopical appearance of various degenerations and of the blood corpuscles and blood parasites. The first chapter is devoted to the cell in health and disease and gives a clearly written and up-to-date account of the fundamental facts in regard to cytology, with special details of the normal and abnormal forms of mitotic division. Under the heading of the composition of protoplasm an outline of the recommendations of the Chemical and Physiological Societies of Great Britain in regard to the nomenclature of the proteins is given. Various cytoplasmic and nuclear changes are also briefly described. This chapter forms a useful introduction and is worthy of special commendation.

The second chapter deals with general retrogressive processes and includes accounts of the various degenerations and infiltrations as well as of necrosis, gangrene, and atrophy. These are all described in some detail and the results of recent work are incorporated. Fatty, waxy, and calcareous changes are dealt with in more detail than is usual in a book of this size and we have nothing but praise for this section of the book. The third chapter on disturbances of the circulation contains good accounts of venous obstruction, dropsy, œdema, chronic venous congestion, and thrombosis. In reference to the process of clotting, no mention is made of thrombokinase or of the possible importance of hæmagglutination in relation to thrombosis. This chapter contains the description of infarction, to which we have already referred.

The description of inflammation and repair usually forms a very good criterion for estimating the value of a text-book on general pathology, and in this connexion we may at once assert that the manner of considering these subjects in the fourth chapter is thoroughly to be commended. The description is clear and concise, and the various factors involved are differentiated and considered in an admirably lucid style. The fifth chapter extends to over one-quarter of the book and is devoted to progressive tissue changes, including under this heading hyperplasia, hypertrophy, tumours, and the granulomata. The consideration of the problem of tumour formation is critical and well arranged; the various theories are briefly enunciated and discussed. The classification adopted is that of Professor Adami into hylomata and lepidomata or "pulp" and "rind" tumours respectively, with their subdivisions. This classification, though ingenious and scientific, has hardly yet achieved sufficient recognition to warrant its use in a text-book intended for students and practitioners; moreover, it introduces a new nomenclature of somewhat cumbrous character. The sixth chapter deals with animal parasites, classified according to zoological principles. The descriptions are adequate and the illustrations are clear and abundant. The last chapter contains within comparatively small compass a useful *résumé* of the general principles of immunity and of the theories advanced to explain it.

The text-book is one which should prove of great value to students and practitioners, for it is concise without being obscure, and gives reliable descriptions of the main data of general pathology. It would be well in a future edition to include more discussion of the phenomena and mechanism of fever.

The Criminal Responsibility of Lunatics. By HEINRICH OPPENHEIMER, M.D., LL.D., &c. London: Sweet and Maxwell, Limited. 1909. Pp. 275. Price 10*s.* 6*d.*

THE problem of the criminal liability of persons of unsound mind has passed through several phases. For centuries none but the grossest forms of insanity were recognised as excusing the patient from the legal consequences of some delinquency. As the barbarism of the Middle Ages has in part passed away so has the position of the criminal lunatic ameliorated, until unhappily, under the influence of certain schools of psychology, some have come to regard the criminal as insane because he is criminal. The scandal, happily comparatively rare in this country, which results when experts on identically the same subject are found to assume diametrically opposite positions is a grave one and calls for much reflection on the part of the medical profession. Dr. Oppenheimer usefully reminds us that the witness who proclaims as scientific facts certain ephemeral hypotheses, however ingenious they may be, merely brings into discredit the profession which he is for the moment representing. The medical man may remember that much of the treatment which is practised in up-to-date asylums is at least founded upon the hypothesis that the lunatic in most cases is capable of regulating his conduct, that is, that he knows his own likes and dislikes, is aware of the rules and regulations of the institution in which he is lodged, and where those rules clash with his personal predilections he is capable of shaping his conduct to accord with the rules rather than with his wishes. Dr. Oppenheimer argues that it is too transparent a sophism to require serious confutation if it is claimed that the insane mind is capable of being checked by the fear of such disciplinary sanctions but not by the threat of those of the criminal law.

To decide the question of the responsibility of an insane person, so far as hospital practice is concerned, may be easy. He is responsible or he is not, and perhaps not a single medical superintendent would, in these circumstances, hesitate to act. There are equally patients of whose responsibility even in the simple affairs of an asylum no medical superintendent would care to express any opinion at all. But place this same medical expert in the witness-box and we shall find in too many cases that the vaguest suspicion of insanity is put forward as a sufficient reason for the exemption of the accused from all the legal consequences of his acts. A witness may give it as his opinion that a person is insane, but it does not follow that that person is irresponsible for all he does, and we fear that the tendency now is, from a purely humanitarian point of view (which sometimes is mawkish as well), to suppose him irresponsible if unpleasant consequences are likely to ensue when the opposite view is taken. If, as the author puts it, it is conceded that very many acts of the insane are not insane acts at all, but spring from the same sources as those of rational beings, if it is an undisputed fact that the majority of lunatics understand the nature and quality of many of their deeds and are quite competent to distinguish right from wrong, if it is finally conceded that very frequently lunatics are quite capable of controlling their conduct, and are, moreover, influenced by fear of punishment, the case for holding them responsible, is, *pro tanto*, made out. Where all these conditions occur the lunatic's mind is amenable to the sanctions of the law. On the other hand, every criminal who can show that he has done some strange act in the past can nowadays hope, if his counsel seeks long and far enough, to find a medical man prepared to testify to his madness, of the nature, perhaps, of that wonderful clinical phenomenon, the "brain storm." In these circumstances it is, perhaps, unsafe to give *carte blanche* to the medical profession by making insanity the sole test of irresponsibility. Indeed, if a sufficiently high standard of mental health be erected, persons entirely free from mental defect would form the exception rather than the rule, and the propaganda directed towards the establishment of such a principle becomes neither reformatory nor progressive, but destructive of the fundaments of criminal justice. The tests which should in fact, so far as is possible, be applied are, firstly, whether the accused was aware of the nature and quality of the act, and secondly, if he could have refrained from it had he chosen to do so. The essential problem in truth lies in the application and findings of this second test.

In regard to moral insanity it is plain that the influences which restrain the ordinary individual from doing wrong are religious, moral, and legal. Where disease has destroyed two out of these three checks it is scarcely reasonable to remove the last barrier that stands between the criminal and the safety of society. Persons who are morally defective pass through life without conscience to restrain them and unless curbed by the hand of the law are left to the control of their appetites and passions alone, and we may then well hesitate to exempt them from criminal responsibility. Between full responsibility and complete irresponsibility there exists scale of diminished responsibility. As there are degrees o insane obliviousness to right and wrong, degrees of self control and degrees of insane impulse, the law ought t recognise the fact that the amount of guilt decreases in th same ratio as mental disease gains in intensity. Th difficulty, however, lies in the method by which we are t penetrate the human soul and determine the precise degre of responsibility.

The book shows a large amount of erudition. The autho has studied the laws of many countries, and has abstracted from them the articles bearing upon the subject of his work In his comments and conclusions he manifests a thoroughly judicial attitude, and for the sake of his medical readers he has presented a complex subject in terms of common-sense couched in good plain English. His conclusions are likely enough to arouse considerable opposition, but that must be the condition of a controversy in which the premisses of the argument are still the subject of inquiry, if, indeed, they are capable of being known at all.

Health and Common Sense. By WOODS HUTCHINSON, M.A., M.D., Lecturer on Clinical Medicine at the New York Polyclinic; late Professor of Comparative Pathology and Embryology, University of Buffalo; Lecturer on Comparative Medicine in the Medical Graduates' College, London. London, New York, Toronto, and Melbourne: Cassell and Co. 1909. Pp. 334. Price 6*s.* net.

THIS book consists of a series of chapters dealing in popular language with matters relating to personal and domestic hygiene. It is in a sense a presentation of elementary physiological facts in a simple form with their application to the ordinary conduct of life. Dr. Woods Hutchinson writes clearly and forcibly; and his observations are practical. His style is crisp and allusive, and his illustrations or similes are to the point, and are not infrequently amusing. He is uncompromising in his exposure of common fallacies, and is particularly scathing in his denunciation of many of the popular superstitions as crystallised in aphorisms, proverbs, and saws, which he irreverently describes as "gems of senility," and again as "little more than the attempts of mediocrity and cowardice to console themselves for their lack of success." A proverb of almost any kind seems to excite him to turn and rend it, and some of the most cherished maxims of our copybook days come in for very severe handling. It is only fair to say that he gives reasons for his opposition, and that he makes a very good case for his views.

After a chapter on the ancestry of health indicating the broad outlines of the evolution of man's organisation, he exposes some diet delusions. He dismisses Professor Chittenden's work on the protein minimum diet very scornfully; he pillories what he calls the fish-phosphorus-brain theory, the prejudice against pork as an article of diet, vegetarianism, "breakfast foods," and the superiority of brown over white bread. He discusses in an interesting manner certain foods, which he classes together under the heading of "poison foods," characterised often by considerable nutritive value, but liable, especially in susceptible persons, to produce gastric irritation and even toxic symptoms, such as certain fruits, shellfish, nuts, and cheese.

The author's views on sleep, about which he writes at some length, are well expressed in the lines which he quotes:—

> "Blest be the man who first invented sleep,
> But curst be he with curses loud and deep
> Who first invented and went round advising
> That artificial cut-off, early rising"

The advice in regard to sleep is in brief to take as much as possible. Sunshine and fresh air he characterises as the real angels in the house, and his plea for ventilation and for care in the choice of sites for house building is forcible and good. He gives advice in regard to bathing, care of the complexion and clothing, and has a chapter on the sins of the shoemaker.

Four chapters are devoted to certain special aspects of child life and education. They are eminently readable and contain many sound and original suggestions. Dr. Woods Hutchinson is a firm believer in the educational value of play for the child, both mentally and physically, and he draws an interesting picture of the ideal school. His last chapter is on the health of the middle-aged man, and is characterised by the same breezy optimism as the rest of the book. For him instinct and the general experience of mankind are safer guides than the doctrinaire rules of pseudo-scientific faddists. Sometimes, perhaps, in his enthusiasm for instinct he makes statements which are open to question—e.g., that the danger of over-eating has been enormously exaggerated; but his book should command a wide circle of readers, for he is always interesting and never abstruse and technical. It appears from a note at the beginning of the book that it was originally called "Instinct and Health," but apparently at the suggestion of the publishers this was altered to "Health and Common Sense," and perhaps the best notice we can give to the book is to express the opinion that no better title could be found.

Les Maladies du Cœur et Leur Traitement. (Diseases of the Heart and Their Treatment.) Par H. HUCHARD, Médecin de l'Hôpital Necker, Membre de l'Académie de Médecine. Paris: Librairie J. B. Baillière et Fils. 1908. Pp. 228. Price Fr. 6.

THIS book consists of nine lectures on diseases of the heart and their treatment. The subject is dealt with from a purely clinical and practical standpoint, and the dogmatic and didactic style, adorned by the literary grace of their distinguished author, renders these lectures particularly interesting and instructive. Their object is avowedly practical, and Dr. Huchard gives the results of his own ripe experience of treatment in the various forms of cardiac disease. He wishes to disprove the nihilistic views of some of the earlier French authorities, such as Brouissais, who said that from the medical standpoint they are "maladies of pure curiosity," and Sénac, who said that "their study gives the useless satisfaction of knowing better the impossibility of curing them."

In his first lecture Dr. Huchard emphasises the importance of the study of the disturbances of function, such as dyspnœa, insomnia, tachycardia, palpitation, syncope, arrhythmia, and præcordial pain, from the point of view of diagnosis and treatment. In regard to dyspnœa he differentiates a mechanical and a toxic form, the former due to simple cardiac failure with defective aeration, the latter occurring in cases of arterial degeneration and associated with defective renal activities. The prognosis and treatment in these two forms are markedly different and are carefully worked out.

In the second lecture the group of "arterial cardiopathies" is differentiated—that is, defects in the heart's action the result of arterial degenerations. Dr. Huchard describes an arterio-sclerotic form of mitral stenosis which he regards as not uncommon. He admits, however, that the physical signs are usually slight, but maintains that the symptoms are very abundant and suggestive. In regard to all these arterio-sclerotic forms of disease he urges the importance of treatment by milk regimen and diuretics, with a view to diminish the intoxication, which is the essential factor in their production as well as in the genesis of their symptoms.

The third lecture is devoted to functional diseases of the heart, and in the fourth a number of errors both of diagnosis and of treatment are detailed. This lecture is of special interest as it contains many personal observations of value, and it exposes many fallacies in regard to the treatment of heart diseases. The fifth lecture deals with the treatment of arterial cardiopathies. Four stages, each with a different line of treatment, are described: the first or arterial stage, treated by careful diet and physical measures; the second or cardio-arterial, treated by means of a milk and vegetarian diet, by nitrites, diuretics, and tonic doses of digitalis; the third or mitro-arterial stage, characterised by dilatation of the cavities and of the valvular orifices, treated by a milk diet, by theobromine, and by digitalis in larger doses; and the fourth or cardiectasic stage, treated by bleeding, by salt-free diet, and limitation of ingested fluids. The sixth lecture deals with the treatment of heart disease resulting from chronic endocarditis. In the seventh lecture Dr. Huchard develops his dictum that "the arterial cardiopathies commence by intoxication, continue by intoxication, and finish by intoxication." In the eighth and ninth lectures the mode of action of certain curative and hygienic measures is discussed.

Dr. Huchard's lectures are both suggestive and helpful, and they should be widely read, for they insist upon the importance of a careful study of symptoms as well as of physical signs in regard to the treatment of individual patients. We have already spoken of the book as dogmatic, but this has its merits.

A Compendium of Food Microscopy. By EDWYN GODWIN CLAYTON, F.C.S., F.I.C. London: Baillière, Tindall, and Cox. 1909. Pp. 431. Price 10*s.* 6*d.* net.

THE value of the microscope in the examination of foods and drugs was proved in a striking way in the researches of the late Dr. Arthur Hill Hassall, who applied the instrument with considerable success to the detection of adulterants in the work of inquiry undertaken by him for this journal in the early "fifties." In committing the results to publication it should be remembered that Dr. Hassall had the advantage of the services of a skilled artist, Mr. Miller, who made the drawings which were reproduced in the reports of the now famous LANCET Analytical Sanitary Commission. Many of these were reproduced in Dr. Hassall's book on "Food: its Adulterations and the Methods for their Detection." Later Mr. Clayton, the author of the volume before us, joined Dr. Hassall in analytical practice, and therefore none could be better qualified than himself to write a revision of the microscopical portions of Dr. Hassall's work. It will soon appear to the reader that Mr. Clayton has done something more than mere revision; he has extended the application of the microscope to the examination of foods and drugs which were unknown in Dr. Hassall's time and he has therefore placed in the hands of all those concerned to maintain the purity of foods and drugs a guide which will afford them very material help in their work of fighting modern methods of sophistication. He has divided the book into four sections, the first dealing with foods derived from vegetable sources, the second with foods derived from animal sources, the third with tobacco, drugs, bitters, and colouring matters, and the fourth with water. The last has obviously involved an amount of fresh matter in view of the advances made in the application of the microscope by modern inquirers to the examination of water intended for drinking purposes. The drawings are well done and will afford a valuable source of reference to the microscopist busily engaged on questions connected with the detection of adulteration. This is a good book, for it not only pays tribute to a man who undoubtedly did pioneering work of the most valuable kind in connexion with microscopical methods for revealing adulteration, but it encourages the further application of the microscope to similar ends.

JOURNALS AND MAGAZINES.

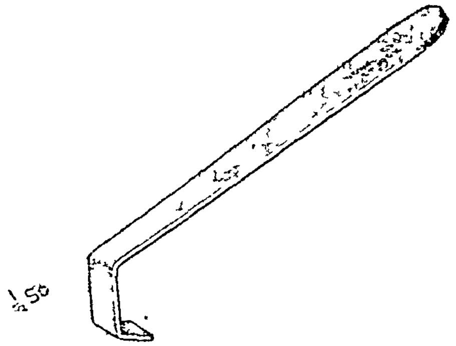
Proceedings of the Royal Society of Medicine. Vol. XI. No. 8. June, 1909. London: Longmans, Green, and Co.—This number of the Proceedings of the Royal Society of Medicine is largely occupied by reports of cases presented to the several sections, many of which we have published. The chief contribution to the Section for the Study of Disease in Children is Dr. F. Parkes Weber's careful account of a case of Congenital Obliteration of the Bile-ducts with Hepatic Cirrhosis, in which a streptococcal infection was the final cause of death. The Dermatological Section is devoted to a full report of Dr. Louis Wickham's demonstration of his methods and results in the Therapeutic Applications of Radium. In the Epidemiological Section Dr. John Brownlee presents certain considerations on the Causation and Course of Epidemics, in which he examines the curves of incidence in several epidemics in relation to known mathematical laws, an interesting and complex piece of work which is capable of extension. Mr. M. Greenwood follows with a statistical examination of the Problem of Marital Infection in Tuberculosis, which leads to the conclusion that our statistical data are at present far from sufficient to settle the question. The keen discussion on these papers, which is well reported, echoes the debate on Heredity in Relation to Disease which occupied so much of the attention of the Royal Society of Medicine earlier in its late session. The Laryngological Section is entirely devoted to clinical records and the Medical Section to papers on the Serum Treatment of Typhoid Fever, by Dr. R Tanner Hewlett, Dr. E. W. Goodall, and Mr. R. M. Bruce. These authors contribute a note on an Ophthalmo-Reaction obtained with a Solid Typhoid Endotoxin, which does not seem to be diagnostic of enteric fever. The Obstetrical Section reports a discussion upon the Management of Rupture of the Uterus, following upon papers by Dr. T. W. Eden and Dr. A. Lionel Smith concerning that grave accident. In the Odontological Section Mr. W. Warwick James writes on the Eruption of the Teeth. The Otological Section records only notes of cases. In the Surgical Section Mr. J. Hutchinson's paper on Auto-inoculation and Re-infection in Syphilis, which has appeared in our columns, precedes an account of Jejunal and Gastrojejunal Ulcer following Gastrojejunostomy, by Mr. H. J. Paterson, who has collected a very careful bibliography of the condition in question. The Therapeutical and Pharmacological Section contains the instructive paper on the Results of a Year's Use of Vaccines in General Medicine, which Dr. W. Hale White and Dr. J. W. Eyre recently published in THE LANCET; and also Dr. William Bain's paper on the Interaction of Digestive Ferments. We note that the next number of these Proceedings will be issued in October, and will include the title-pages and index for the second volume.

New Inventions.

A NEW RETRACTOR AND ARTERY FORCEPS.

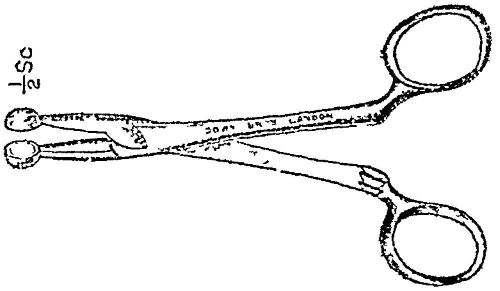
I SHOULD like to bring two instruments which I have devised to the notice of other surgeons. The first is a retractor for the splitting operation for appendicitis. As I consider the splitting operation in appendicitis the only justifiable one, I have thought that the modification in the form of the retractor shown in Fig. 1 obviates one or two objections common to those in ordinary use, because (1) the part introduced in the wound is always in the same plane as the muscle retracted, consequently it is not lacerated; (2) the width of the retractor is just enough to give a good field of operation without unduly stretching the external oblique; and (3) the handle is placed at an angle to accommodate the assistant's fingers below, whilst the thumb lies on the upper surface.

FIG. 1.



The other instrument (Fig. 2) is an artery forceps of a new pattern. The difficulty of tying beyond the points of the artery forceps in deep situations led me to try a globular end to the Spencer Wells, and I can now, after a fair trial, attest to the great advantages thereby attained, because (1) they do not take up more tissue than other forceps; (2) the surgeon can tie off the artery by himself and take off the forceps afterwards; (3) once the ligature is beyond the greatest circumference of the globular end it must tie off properly if it is tied tight enough, and the certainty of this saves much time in operating; (4) they will pick up the smallest and most fragile artery; and (5) the circular grooves on the inner surface give a very firm hold.

FIG. 2.



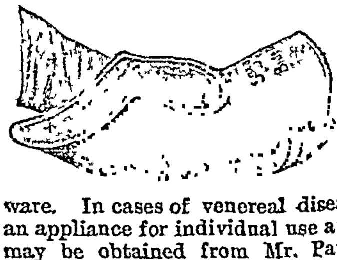
Messrs. Down Bros. have taken great pains in carrying out my ideas in both these instruments which they have made excellently.

A. Z. C. CRESSY, M.R.C.S Eng.

Wallington.

THE SEXA-BIDET.

THE Sexa-Bidet is a very convenient appliance either for simply washing the parts in question or for the application of medicated lotions. When in use it is held in the hand in a horizontal position as shown in the illustration, the curved edges being pressed firmly against the body; it may also be partly filled with water when standing upright on a table, like an ordinary jug. It is quite portable, measuring 13 inches in its greatest length and about 5 inches in width. The material is highly glazed white earthenware. In cases of venereal disease the advantages of such an appliance for individual use are obvious. The Sexa-Bidet may be obtained from Mr. Paul Metz, 29, Newhall-hill, Birmingham. There is a slight difference in the curvature of the open end in the patterns used by males and females respectively; the prices are 4*s.* 6*d.* for the former and 5*s.* for the latter.



THE
BRITISH MEDICAL ASSOCIATION.

SEVENTY-SEVENTH ANNUAL MEETING
AT BELFAST.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 30TH.

President: Professor JAMES ALEXANDER LINDSAY (Belfast)

Dr. H. S. SOUTTAR (Brentwood) described the experiments which he and Dr. Theodore Thompson had made in order to secure

A Practical Form of Gastroscope.

At first they considered it axiomatic that a gastroscope must consist [illegible] during [illegible] the seg[illegible] proved to be wrong, although one form was constructed on this principle. Experiments on the cadaver proved futile except for purposes of measurement. In order to determine the normal form of the œsophagus and to what extent it could be straightened they passed metal-lined bougies and examined their shadow on a fluorescent screen by means of the X rays, the patient bending his back and moving his head in various directions. By experiments upon themselves [illegible] rate a straight [illegible] fauces to the [illegible] cardia such a straight rod could not be carried, since it would impinge on the lower dorsal vertebræ. The lower end of their instrument was therefore bent forwards at an angle of 30°. At the upper end of the tube an oral portion was added at an angle of 60° with the œsophageal limb. In this way there was evolved an instrument with only two angles, which conformed exactly to the anatomical requirements and proved easy to pass, for the forward tilt of the beak, instead of being a danger, proved to facilitate its passage. When it was being passed the patient's head and neck were brought well forward, accentuating the dorsal concavity, into which the angular instrument fitted snugly; during the descent of the instrument the head and neck were allowed to fall back. Dr. Souttar and Dr. Thompson had never found any difficulty in passing the instrument and had observed no ill effects from its use. The preparation of the instrument proved to be very expensive, since six complete instruments were made by Dr. Souttar himself before a practicable form was reached, and the authors acknowledged their indebtedness to the London Hospital Medical research fund for assistance. The instrument consisted of three layers—an outer protective layer of steel, a middle supporting layer of metal covered with silk, and an inner tube which was capable of rotation, this rotation being transmitted to the nose-piece of the instrument. An arrangement of mirrors and a lens of very short focal length enabled a small image to be formed near the eye end of the tube, and this image was examined by an eye-piece. Owing to the possibilities of moving the tube and of rotating the nose-piece practically the whole of the inner surface of the stomach could be examined, but it was necessary to inflate the stomach with air for this purpose. In using the gastroscope the stomach should, if possible, be empty, and it was shortly beforehand washed out by means of a tube. It was preferable that the patient should be under an anæsthetic. The mouth was opened by means of a Mason's gag and the head lifted forwards. A full-sized bougie was first passed as a precaution, and after its withdrawal the nose of the gastroscope was guided into the pharynx by the finger. At the cricoid cartilage some resistance was always met from tilting of the cartilage and from spasm of the upper end of the œsophagus. Gentle manipulation soon enabled the instrument to pass, and it glided down the œsophagus by its own weight. Slight spasm was again met with at the cardiac orifice. As the instrument glided down the head was gradually allowed to fall back again. The pump was attached and the stomach inflated, whilst an assistant percussed out its lower border. The light was switched on and the nose rotated and deflected until the whole mucous membrane had been systematically examined. Dr. Souttar claimed that no more manipulative skill was required than in the use of a cystoscope.

Dr. THEODORE THOMPSON (London) gave an account of the results achieved by this instrument. He pointed out the great importance of early diagnosis in the graver disorders of the stomach, notably in carcinoma and ulcer. It was desirable that carcinoma of the stomach should be diagnosed before the tumour became palpable, by which time the lymphatic glands had almost invariably become infected. It was [illegible] at pres[illegible] the pre[illegible] was the [illegible] of the stomach in all cases of persistent gastritis in adults. In an apparently healthy stomach the first appearance observed was of a bright red reflex. On carefully focussing with the eyepiece the folds of mucous membrane could be seen running transversely across the field, and there were numerous bright specks of light due to the reflexion of light [illegible] us on the surface. At the pyloric end [illegible] of acute gastritis, of a case of anæmic mucous membrane of a stomach with petechiæ, of another with gastric ulcer, and of another with pyloric carcinoma

Dr. LEWIS A. SMITH (London) and *Dr. D. W. SAMWAYS* (Mentone) both spoke briefly and Dr. SOUTTAR replied. A demonstration of the instrument was given.

Dr. A. GORDON GULLAN (Liverpool) read a paper on a

Unique Case of Hour-glass Contraction of the Stomach,

making special reference to diagnosis. The patient was a woman, aged 36 years, who had been subject to attacks of vomiting since her school days, these attacks being independent of pain and also of the ingestion of food. Later in life gastralgia had occurred and two years before severe hæmatemesis and more frequent vomiting with signs of dilatation of the stomach appeared. These symptoms at first disappeared under treatment by lavage in the Liverpool Stanley Hospital, but soon recurred after her return home, and then marked peristalsis of the stomach manifested itself. As all forms of medical treatment were unavailing a gastro-jejunostomy was performed, but the patient died. The stomach was found to be enormously dilated, extending [illegible]s; it was somewhat twisted [illegible] to two large portions, both [illegible] stomach. The proximal portion was the larger one and overlapped the distal, to which it was fixed by adhesions, and thereby preventing the fissure between the two portions from being recognised during life, and the two parts from separating from each other. The pylorus was tough and fibrous and only transmitted a small quill, and this fibrous tissue was continued along the lesser curvature for about four inches to the spot at which the hour-glass constriction occurred; this was so narrow that the little finger alone could pass through the opening. Dr. Gullan discussed the various tests useful in the diagnosis of hour-glass contraction of the stomach, and showed that many of them were absent in this case owing to the adhesions, the twisting, and the overlapping of one part of the stomach over the other. For these reasons the bilobed appearance could never be detected during life.

Dr. PURVES STEWART (London) read a paper on the

Technique and Results of Schlosser's Method of Treatment of Tic Douloureux.

He described tic douloureux as the most severe of all forms of physical pain, and stated that owing to its inveterate character and its tendency to increase in frequency and severity the patients were ultimately driven to chronic morphinism or to suicide. It had been a therapeutic despair for many years, since operations on the peripheral branches of the nerve only gave temporary relief and produced deformity, while the operation for excision of the Gasserian ganglion was one of considerable mortality and led to grave deformity from muscular wasting, with anæsthesia of the skin, nose, eye, and mouth, and occasionally a destructive ophthalmia in the anæsthetic eye. He then referred to the results obtained by Professor Schlösser from the injection of alcohol into the foramina of exit of the branches of the nerve from the skull. These injections might produce temporary cutaneous anæsthesia, but they led to a cessation of the pain, often for prolonged periods. Among 120 cases there was an average period of relief lasting from 10 to 11 months, and this without scarring, deformity, or permanent anæsthesia. The apparatus necessary was a stout hollow needle 10 centimetres long and 1½ millimetres in diameter, provided with a blunt stilette projecting beyond its point. The needle was marked in centimetres up to 5. The method was to push in the needle through the skin and then to project the blunt stilette through so as to avoid injury to vessels in carrying the needle to the foramen selected. The stilette was withdrawn and 2 cubic centimetres of alcohol of 75 per cent. strength, containing 2 grains of eucaine to the ounce, were injected. On withdrawal the puncture made by the needle was covered with collodion. No general anæsthetic was necessary, except in the case of the first division, the patient only feeling a transient flash of pain when the nerve was reached. The directions for reaching the foramina were as follows: (1) for the foramen rotundum, to enter at the lower border of the zygoma near its anterior end and to push inwards into the pterygo-maxillary fossa, the foramen being at a depth of 5 centimetres from the surface; and (2) for the foramen ovale to enter at the lower border of the zygoma 2·5 centimetres in front of its descending root, the foramen being at a distance of 4 centimetres from the surface. For the first division the needle should be introduced along the outer wall of the orbit for a distance of 3·5 centimetres. Sometimes one injection was enough to relieve the pain, but it was better to repeat it after two days and again after three or four days. The only complications observed were temporary stiffness of the lower jaw in the case of the second and third divisions, with some œdema of the lower lid and slight weakness of the facial muscles. With the first division there was marked œdema and sometimes transient paralysis of the external ocular muscles. Dr. Stewart quoted 15 cases which he had treated by this method, and in 12 of these, or 80 per cent., there had been recovery lasting from ten months downwards. He also described the three cases of comparative failure, and in conclusion said that although not a panacea the injections were a useful form of treatment.

Dr. W. B. MCQUITTY (Belfast) showed a case of this disease, and Dr. STEWART gave injections into the foramen ovale and foramen rotundum.

The paper was discussed by Dr. W. P. KENNEDY (Bath), Mr. H. A. BALLANCE (Norwich), Dr. TOM A. WILLIAMS (Washington), and Dr. O'SULLIVAN.

Dr. TOM A. WILLIAMS (Washington, D.C.) read a paper on

Tabes Dorsalis, its Rational Treatment in the Light of its Real Pathogenesis.

He deprecated the pessimism as regards treatment in this disease engendered by the dystrophic theory of its pathogenesis, and showed microscopical sections and lantern slides in support of the radicular theory which was first brought forward convincingly by Nageotte. Dr. Williams believed that there was a round-celled infiltration of radicular meninges and that this process differed only in intensity, but not in nature, from that upon the meninges elsewhere in syphilis, and showed that in some spots there might even be found a well-marked granuloma of minute size. This inflammatory process invaded the peri- epi- and endo-neural sheaths and impinged upon and injured the nerve fibrils. Their degeneration at this spot led to the degeneration of the posterior columns of the cord. The objection that these radicular changes were more often absent than present was only true as regards the macroscopic appearances. Careful search with the microscope always revealed meningeal exudates. The escape of the anterior roots was merely relative, and the rapid regeneration which occurred in them and which was possible because of their connexion with their trophic cells entirely negatived a dystrophic explanation. In the light of these observations Dr. Williams strongly recommended intramuscular or intravenous injections of mercury, and claimed that the local radiculitis which he regarded as the basis of the disease could be arrested in a large proportion of the cases. Intramuscular injections sufficed for most cases, except those threatened with rapid loss, of vision. The forms of mercury he employed were the cyanide or perchloride. For intravenous injection a very small and very fine needle of platinum-iridium was used, and after insertion it was recommended to draw out a drop of blood into the syringe in order to make certain that the vein had been entered.

Dr. THEODORE THOMPSON (London) said that in his opinion the radicular theory was not proved. He believed that in tabes dorsalis the symptoms were those of a lesion of the secondary sensory neurons, and that the lesion was situated at the junction of the primary and secondary neurons—namely, in the pericellular network in the posterior cornua—where the earliest changes were found. Tabes dorsalis was therefore a dystrophy beginning in the axonal terminations within the spinal cord, while the changes in the posterior roots were secondary.

Dr. GORDON GULLAN (Liverpool) endorsed Dr. Williams's view that early cases should be treated with antisyphilitic remedies and mentioned cases treated with benefit on these lines.

Dr. WILLIAMS briefly replied.

Dr. H. D. ROLLESTON (London) read a paper on

Pruritus in Lymphadenoma.

He stated that itching of the skin in lymphadenoma was not often recorded. In an analysis of over 90 cases it was only mentioned in three. In 20 cases at St. George's Hospital, London, he had found it in three. The causation of this symptom was unknown. It was not due to drugs. It had occurred before arsenic was given, and in one case it occurred after potassium iodide had been administered. There was no evidence that it was due to any special infiltration of internal organs. In a case under the care of Dr. W. Howship Dickinson the liver was found to be lardaceous, but it had occurred in cases without involvement of the liver. It was natural to suppose that it was toxic, and the occurrence of lardaceous changes in the liver in two cases supported this view, as did also its association with general exfoliative dermatitis. By analogy with the itching in jaundice it might be expected to be absent in children, and the earliest recorded case was at the age of 16 or 17 years. It might be one of the earliest symptoms, appearing even before enlargement of the glands. It might lead to infection of the skin, producing lesions simulating Hebra's prurigo. Dr. Rolleston had the impression that cases with early itching ran a rapid course. In regard to treatment, ordinary methods such as calcium chloride, carbolic acid, and antipyrin should be tried, but the itching was often so severe that morphia was necessary.

SURGERY.

FRIDAY, JULY 30TH.

President, Professor T. SINCLAIR (Belfast).

Mr. G. A. SYME (Melbourne) read a paper on

Some Unusual Cases of Echinococcus (Hydatid) Cyst, with Remarks on Diagnosis and Treatment.

He commenced by saying that he much preferred to call these cysts "echinococcus cysts," as was customary in Australia. The diagnosis of an unruptured echinococcus cyst in the liver or lung was fairly easy, especially since the introduction of X rays, for the cyst had a typical appearance in a skiagram. When the cyst was ruptured in the liver the diagnosis was not so simple, for the passage of the daughter cysts down the biliary passages might give rise to symptoms resembling biliary colic. When a cyst of the liver caused gradual absorption of the diaphragm and then burst into the lung it was liable to be mistaken for a primary cyst of the lung; but here also X rays might enable the diagnosis to be made. External violence might cause rupture and give rise to abdominal symptoms. The manner of reproduction of a hydatid cyst varied with the tension; in bone where there was little possibility of expansion the cyst reproduced itself exogenously, but when the cyst was able to grow freely and to become spherical, very few daughter cysts were formed. Mr. Syme decribed the case of a female patient, 24 years old, who had pain in the left buttock shooting down to the left ankle. The condition had lasted six months, with a swelling that was said to vary in size. She had lost flesh. On examination there was found a tense and elastic swelling in the left iliac region, and in Scarpa's triangle on the same side. The blood contained 9 per cent. of eosinophils. A skiagram showed much "rarefaction" of the ilium and sacrum. At the operation a cyst was found connected by a pedicle with a cavity in the sacrum. The patient had improved since. In another case a patient complained of pain on the right side of the chest, and on the right side of the spine there was a swelling. It was found at the operation that a cyst was involving a costovertebral joint and extended into the cavity of the chest, and cysts had also formed within the bodies of some vertebræ. Recovery followed. The value of the precipitin reaction in diagnosis was by no means certain, but eosinophilia was a useful help. In the treatment of echinococcus cysts it was possible sometimes to close the wound completely without drainage.

Mr. J. WARD COUSINS (Portsmouth) referred to two cases which he had seen of unsuspected subdiaphragmatic cysts accompanied with high fever. He also mentioned a case of enormous hydatid cyst of the abdomen which had been mistaken for ascites.

Mr. SYME, in reply, referred to a very large cyst arising from the liver in which huge masses of bilirubin were found.

Mr. P. J. FREYER (London) read a paper on

A Recent Series of 200 Cases of Enucleation of the Enlarged Prostate, with Special Reference to the Operation (1) in Octogenarians and (2) in Cases of Extremely Large Prostate.

He said that it was now eight years since the introduction of his method of enucleating prostates and he had described several series of cases; he had performed 212 prostatectomies since he read his last paper on the subject. Among these there were 17 cases in which the patient was over 80 years of age, one of them having a fatal result. Of the 644 cases on which he had operated there were 48 octogenarians, or if nine cases of the age of 79 years were included, there were 57 cases of patients 79 years of age and over, and of these six died. In his opinion there was just as much chance of success in the operation in an octogenarian as in a younger patient provided the kidneys were sound. Careful nursing was of the greatest importance. The size of the prostates which he had removed varied greatly, but the size of the incision need not be very large even for a very large prostate, for the prostate was elastic and could pass through an opening smaller than itself. The weight had varied from half an ounce to nearly 17 ounces, with an average of 2½ ounces; there were in all 644 cases, and the ages varied from 48 years to 89 years; there were 39 deaths, equal to a mortality of 6 per cent., but in the last 200 cases the mortality had fallen to 4·24 per cent. In 114 of the cases a calculus was removed at the same time.

Mr. A. B. MITCHELL (Belfast) congratulated Mr. Freyer on his success, and he expressed the opinion that the present operation was entirely due to Mr. Freyer.

Mr. WARD COUSINS asked if in severe septic cases the bladder was drained before the operation.

The PRESIDENT asked if the removal of a large prostate left an hour-glass-shaped cavity.

Mr. FREYER, in reply, said that the cavity previously occupied by the prostate became a part of the bladder cavity and disappeared as a separate space, though in some of the earlier cases a separate space did persist, and this was due to not passing the catheter sufficiently frequently when washing out the bladder. In cases where the tongue was dry and the kidneys were affected he preferred to open and to drain the bladder for a week or ten days before enucleating the prostate.

Mr. E. C. HORT (London) read a paper on

The Diagnosis of Malignant Disease by Estimation of the Antitryptic Content of the Blood Serum.

He said that the need for improved methods of diagnosing cancer was shown by the fact that of 3532 cases proved after operation or after death to be cancerous the disease had not been recognised in 582 cases—i.e., 1 case in 6 was missed. In 303 cases occurring in the first 25 years of life the disease was not recognised in 128—that is, the disease was missed in 1 case in 2·3. In addition 334 cases diagnosed as cancerous proved to be not malignant. The paper was written to show that it was possible to diagnose cancer by measuring the antitryptic power of the blood serum. By the antitryptic power of the blood was meant the power that a serum had of antagonising in vitro the digestive activity of the ferment trypsin. The antitryptic power of the serum of healthy adults was found to be so constant that healthy serum could be used as a standard. The antitryptic power of the serum in certain non-cancerous conditions, such as after fractures and nephritis, was above the normal as a result of auto-infection; it was also raised in general bacterial diseases. It was raised in 94 of 100 consecutive cases of undoubted cancer; after successful removal of the cancer the antitryptic power of the serum was raised, but in cases in which recur- [illegible] raised power was no proof of malignancy unless simple auto-infection and bacterial infection could be excluded.

Mr. A. B. MITCHELL (Belfast) read a paper on 16 cases of

Perforating Duodenal Ulcer

which he had had under his care. All the cases recovered. He referred to the great frequency of gastric and duodenal ulcers in Belfast, and pointed out that in diagnosing the presence of a perforation too much weight must not be laid on the absence of shock A sudden intense pain and rigid abdominal muscles afforded the most certain signs. Extravasation was not great in amount as a rule, and this he attributed to a contraction of the pylorus, which prevented the contents of the stomach from passing out; and this explanation would account for the fact that the results in perforated duodenal ulcer were much better than those following perforation of a gastric ulcer. He preferred an incision through the right rectus muscle and he closed the opening in the duodenum by means of a purse-string suture. He did not flush out the peritoneum, but he inserted a glass drain tube over the pubes, and from this there always came a free flow of liquid. He preferred to perform immediate gastro-jejunostomy, and this he did in seven cases, all of which recovered. After the operation the patient was propped up in the sitting posture, and a continuous flow of saline fluid into the rectum was set up, about a pint being passed in every hour. For washing out the drain tubes he used a solution of perhydral, about 1 in 10 or 12, and this he found very effective.

Mr. WARD COUSINS said that in his opinion the amount of shock present in cases of perforation depended chiefly on the amount of extravasation.

Mr. W. THELWALL THOMAS (Liverpool) pointed out that Murphy's method of continuous rectal irrigation was often carried out inefficiently.

Mr. MITCHELL, in reply, mentioned an objection to opium even after the diagnosis of perforation was made—namely, that the apparent amelioration produced was likely to make the friends postpone operation.

Mr. G. H. EDINGTON (Glasgow) read a paper on

Some Cases of Intestinal Anastomosis.

He classified these operations into three groups—namely (1) cases in which small intestine was united to small intestine, (2) cases in which the ileum was united to the colon, and (3) cases in which portions of the large intestine were anastomosed. He described some cases which he had treated and gave details of the methods employed.

Mr. C. A. LEEDHAM-GREEN (Birmingham) read a paper on

Scopolamine-morphine Narcosis.

He said that he had some time ago been in favour of spinal analgesia, but it was not an ideal method from the patient's point of view, for a troublesome headache frequently followed. On the other hand, the method which he was now bringing forward was almost ideal from the patient's point of view. At first he gave a large dose of scopolamine and morphine and did not use a general anæsthetic, but it was much better to give a small dose and to follow it with a general anæsthetic. The procedure he preferred was as follows. The evening before the operation he gave ten grains of veronal and this ensured the patient having a good night's rest. Two hours before the operation he injected a sixth of a grain of morphine and a hundred and thirtieth part of a grain of scopolamine. An hour later half of this dose was injected. At the operation itself a general anæsthetic was given, ether being preferred. The advantages were great, because (1) the patient was spared much nervous tension; (2) full narcosis was quickly obtained; (3) the amount of the general anæsthetic was halved; (4) less mucus was formed; (5) a long and peaceful sleep followed the operation, lasting from four to six hours; (6) there was almost an absence of vomiting, for it occurred only in one case out of ten; and (7) the risk was much lessened.

Dr. CLEMENT DUKES (Rugby) said that he thought much of the method and employed it greatly. He found that it was necessary to use a very small amount of the general anæsthetic.

Mr. Leedham-Green said that he did not in any way suggest that the method was final and no doubt it would be improved.

A paper by Mr. Alexander Blaney (Dublin) on

Four Cases of Removal of the Gasserian Ganglion

was read by Mr. H. Stevenson (Belfast). In the paper the methods of removal of the ganglion and the value of the operation were discussed.

On the motion of Mr. Ward Cousins, a cordial vote of thanks for presiding was accorded to Professor Sinclair.

HYGIENE AND PUBLIC HEALTH.

Thursday, July 29th.

President, Dr. Louis C. Parkes (London).

This section met in joint conference with the Laryngology, Otology, and Rhinology Section.

A very full and well-sustained discussion took place upon

Latent Infections of the Diphtheria Bacillus, and Administrative Measures Required for Dealing with Contacts.

Dr. P. Watson Williams (Bristol) dealt with the question from a clinical point of view and Dr. R. M. Buchanan (Glasgow) from a bacteriological standpoint, while Dr. Duncan Forbes (Brighton) and Dr. R. V. Clark (Leeds) dealt with administrative measures.

Dr. Watson Williams, in opening the discussion, said that he considered that if diphtheria was defined as any pathological condition, either local or general, and due to infection by specific diphtheria organisms, it was latent when such pathological conditions were unaccompanied by obvious illness. He further considered that the impinging of diphtheria bacilli on the nasal or oral mucous membrane without any local reaction was not a true diphtheria, but was clinically a form of latent diphtheria. These latent forms could be clinically divided into the following three main groups. 1. Patients who afforded none of the usual clinical indications of diphtheria, were not definitely ill, and yet were found to be anæmic, or to have increased pulse frequency, or who were simply poorly in association with nasal catarrh, membranous rhinitis, faucial redness or slight subacute tonsillitis, otorrhœa, or sores, &c., which on bacteriological examination proved to be diphtheritic. He gave the clinical history of two such cases, one being a patient who presented no clinical symptoms, but whose culture preparation showed diphtheria bacilli and who died shortly afterwards. The second case was one of an adult with accessory sinus suppuration and congested follicular tonsillar crypts, whose culture preparation also showed diphtheria bacilli. A child who came into contact with her showed nothing definite clinically, but a culture taken from it demonstrated diphtheria bacilli and virulence upon inoculation. 2. Cases with local diphtheritic lesions, but presenting no general symptoms of ill health. He considered that this class comprised cases that were indisputably latent. He referred in this connexion to a woman suffering from sore-throat of indefinite nature who three weeks afterwards gave a children's party; some of those who were present developed membranous rhinitis, cultures from whom showed the diphtheria bacillus. After three months they were declared free from infection, and yet they afterwards gave diphtheria to a relative. 3. Persons who presented no local lesions and no departure from normal health, but in whom diphtheritic organisms had been discovered by culture tests. These cases he termed healthy infected contacts. In this connexion the cases cited by Graham Smith, which might appear to upset the speaker's theory, he did not consider conclusive, because no mention had been made of any cultures taken from the nose, which he believed absolutely necessary. He was aware that house surgeons and nurses in contact with diphtheria patients might harbour virulent organisms without manifesting any local signs of disease, but practically they did not convey infection, as organisms inhaled and merely coming into contact with a healthy nasal mucosa were quickly removed, whereas if they were retained and multiplied such cases come under Class 2. He suggested that the practical criterion, however, was the virulence test by inoculation, and that the morphological characteristics of the bacilli were not reliable, and he instanced cases in proof of this assertion. With reference to treatment, he did not think that local applications were of much use in causing the disappearance of the bacilli, though during their use they diminished the infectivity of the patient. It was practically impossible to get any antiseptic in contact with those organisms in the superficial layers of the mucosa and at the bottom of the various crypts in the neighbourhood. He considered that antitoxic serums had some anti-microbial effect, but that in a large proportion of cases they failed because the proportion of bactericidal substances varied, and because it was necessary to use larger quantities of the serum than was necessary merely for their antitoxic effects. Vaccines might be applied locally and cause a diminution in the number of the bacilli; also cataphoresis as employed by Dr. Taylor was worthy of consideration.

Dr. Buchanan said that the identification of the diphtheria bacillus in routine diagnostic work depended on the morphological characters of the organism. The exigencies of the work demanded expedition, which in a small proportion of instances was secured at the expense of accuracy. At the same time, morphology in itself was not sufficient to place the recognition of the bacillus beyond doubt, and for this purpose it was necessary to resort to cultural and inoculation tests involving from four to six days as a minimum period of time. With a view of giving support to bacteriological diagnosis based on morphology various tests had been devised, and the use of media containing different sugars, with an indicator to show the presence or absence of acid production, had given the best results He himself had obtained excellent and rapid results by coagulating ox serum in an equal quantity of water, filtering the mixture, adding 1 per cent. of glucose to one half and 1 per cent. of saccharose to the other half and "tubing," neutral red being used as an indicator. In 24 hours a marked acid reaction was produced in the glucose tube by bacillus diphtheriæ, and in both tubes by bacillus xerosis, while no change was produced in either tubes by the bacillus of Hofmann. The virulence of the diphtheria bacillus in apparently healthy subjects, whether designated contacts or carriers, was only slightly less than the virulence of the organisms in patients. He had applied the virulence test in the case of 21 contacts with positive results in 66 per cent. of the instances. The test as applied to the bacillus isolated from 56 patients showed virulence in 74 per cent. of them. The bacillus diphtheriæ was most tenacious of its virulence, and attempts which had been made to reduce the virulence of the organism by the usual means of heating, drying, and prolonged cultivation had not shown any conspicuous success. On the other hand, it was possible to increase the virulence of a particular strain experimentally. When the bacillus gained a lodgement in the throat it appeared to remain for a varying length of time, whether it produced disease or not. The period of residence of the organism in the sick and in the healthy was probably determined by the same factor and was not apparently influenced by antitoxin. A comparison of clinical cases and infected contacts showed no very marked difference in the average period during which the bacillus was harboured in the throat

Dr. Duncan Forbes, in discussing the question from an administrative point, said that before penal action could be taken a person must be *suffering from* the particular disease, and he suggested that in future legislation the word "suffering" should be replaced by the phrase "in an infective condition." As regards the taking of swabs for bacteriological examination, he considered that too little attention had been paid to the probability of nasal diphtheria being much more infectious than throat diphtheria. In collecting exudation on swabs a careful study should be made of the parts from which it was taken, especially when it was taken from the nose, and where there was much secretion coming from the nose this should be wiped away before applying the swab to the mucous membrane. The administrative measures for dealing with contacts depended on the situation of the primary cases. In schools the first action should be to make inquiries at the school as to absentees from the same class who returned to school shortly before the onset of the disease in the patient. Swabs should be taken from all pupils, present or absent, in whom there was a history of sore-throat or cold. In Brighton infective contacts were sent to the diphtheria wards of the isolation hospital. Except in the case of adults antitoxin was usually injected on admission, and the contact was treated as a diphtheria patient, three negative swabs being obtained from nose and throat before discharge. If objection was made to removal to hospital the child was medical attendant, and children who had been in direct association with case [illegible] who were carriers of Hofmann [illegible] department at the fever hosp[illegible] istrative procedure between Brighton and Bristol was that in the former town Hofmann's [illegible] Dealing with the question of the [illegible] Dr. Forbes said that the [illegible] tions was in order that carrier cases might not be created. It had been proved that antitoxin had no influence on the length of infectivity, though it was probable that attacks of diphtheria in contacts were rendered milder by the injection and were therefore all the more readily overlooked. It thus followed that exten[illegible] the non-isolation of [illegible]

Dr. **Clark** gave [illegible] in Leeds in connexion with outbreaks of diphtheria. He was of opinion that the incidence of cases of latent diphtheria was greatest where contact had been closest. He considered that a bacteriological examination should be made of material taken from the throat of every member of a family in which a case of diphtheria occurred, and that those should be isolated where a positive result had been obtained. The amount of work thus involved would be initially large but would tend to decrease.

Dr. J. A. **Knowles Renshaw** (Manchester) supported Dr. Watson Williams in his advocacy of the virulence test.

Dr. D. **McKenzie** (London) expressed the view that the two lessons to be learned from the discussion were that nasal swabs as well as throat swabs should be taken, and that where Klebs-Löffler bacilli were found in carrier contacts the virulence test should be applied before isolation was resorted to.

Dr. E. W. **Goodall** (London) pointed out that in the epidemic of diphtheria in London in 1893-94 bacteriological examination was not resorted to, and in spite of its absence the disease began to diminish. In order to put himself right with the metropolitan medical officers of health he made it a rule not to discharge patients until a certain number of negative results had been obtained after bacteriological examination, but he did not get any better results than his colleagues who did not follow the same practice. He considered that return cases of diphtheria were a negligible quantity, and he thought that those which were supposed to occur might very well be within the limits of accidental infection. It would be a very good thing if it could be decided once for all whether the swabbing of convalescents was desirable or necessary. The practice of giving prophylactic injections of antitoxin serum was not without danger, and he did not recommend it as a matter of ro[illegible], but sooner or later a [illegible]

Mr. **Herbert** [illegible] with Dr. Davies and Mr. Heaven of Bristol that Hofmann's bacillus might be ignored in the absence of cases of diphtheria, but he considered that during epidemics they must be reckoned with. He emphasised the importance of personal infection and suggested that when a case of diphtheria occurred in a class or group of children instead of prohibiting school attendance altogether the particular class should be taught in the open air.

Dr. **StClair Thomson** (London) asked what should be done with carrier cases, more especially with regard to their treatment. He would like some definite information as to whether treatment with serum shortened the sojourn of the bacilli in the nose or pharynx, and whether it lessened the risk of spreading infection.

Dr. J. M. **Clements** (Batley) referred to the value of the morphological test in determining whether a bacillus was the true diphtheria bacillus or not. For ordinary routine work he found that a microscopical examination after 24 hours' incubation on blood serum was sufficiently accurate. Wesbrook's classification was a useful working one and all bacilli conforming to the C and D types could be safely regarded as positive. The Hofmann type could be disregarded, though occasionally he had met with a virulent case of diphtheria which after repeated swabbings had revealed only that type. The differential culture test which he admitted that owing to the low degree of infectivity of the disease it was difficult to come to any definite conclusion on the matter.

After some remarks by Dr. R. H. **Scanes Spicer** (London) and Dr. H. J. **Egerton H. Williams** (Sheffield),

Dr. **Andrew Wylie** (London) asked Dr. Watson Williams if he would operate on a mastoid or sinus case if the diphtheria bacillus were found in the discharges.

The **President** said that the question under discussion was not one upon which they could dogmatise. He emphasised the importance of taking nasal swabs in suspected diphtheria and said that he had been particularly struck with the large number of outbreaks of the disease in the Victoria Hospital for Children which had been caused by nasal infection. He urged the importance of clearing out the nasal passages with hot water or in other ways before taking material for examination. He agreed with Dr. Goodall that mere contacts should not be sent to hospitals where there were acute cases of the disease. Referring to special homes for carrier contacts he was of opinion that they were quite unnecessary. During inter-epidemic periods he considered the proceeding of little value, but his experience in London had led him to the conclusion that the striking power of diphtheria was much greater in epidemic periods than at other times.

Dr. **Robert Mowbray** (Castlederg) pointed out that the less interference there was with an epidemic the sooner [illegible]ted. The careful guard[illegible] the disease being always [illegible] in an epidemic form.

Dr. **Watson Williams**, replying on the discussion, said that until a few years ago diphtheria was treated in the *ordinary wards of the Royal Infirmary in Bristol, except* in the case of children, and no cases of infection occurred. He considered that carrier contacts in public schools must be isolated, but he admitted that when the organism had been found it was difficult to know what to do with the host. The Hofmann type of bacilli he always neglected. He suggested the advantage of giving antitoxin by the mouth and when administered for prophylactic purposes it might be administered with advantage in peppermint water.

Dr. **Forbes** said that if an outbreak of diphtheria occurred in the scarlet fever ward of a fever hospital under the direct control of the medical officer of health, he considered tha new cases might be admitted to the ward, but that in a children's hospital which would not be under the charge of the medical officer of health he would prefer to close the ward before admitting fresh cases.

Dr. **Buchanan** said that he did not attach any importance to the Hofmann type of bacilli. Routine diagnosis depended entirely upon the morphological test, but where it was necessary to have absolute diagnosis the virulence test was essential. The form of the bacillus depended very largely upon the medium used, and where the morphological test was in doubt a tentative opinion should be given until the virulence test had been applied.

Dr. **Edward Magennis** (Dublin) read a paper dealing with the

Duties of the School Medical Officer.

He deplored the indifference of the public to matters relating to health and expressed the opinion that more attention was [illegible]ings. [illegible] importance of the [illegible] of the section were given an opportunity of inspecting the sewage outfall works of Belfast, situated on land reclaimed from the Lough. Included in the plant were percolating filter beds with revolving sprinklers and Dibdin slate beds, the adoption of the latter having been decided upon in order to avoid the great cost of dealing with enormous quantities of sludge. The difficulties attending the disposal of the sewage of Belfast are associated mainly with the enormous growth of ulva latissima which has accompanied the discharge of the sewage into Belfast Lough. The patient labours of Professor Letts appear to be in a fair way of solving these difficulties, and the visitors saw for themselves the operation of the experiments which had been made.

FRIDAY, JULY 30TH.

Dr. HENRY O'NEILL, a member of the Belfast corporation, in giving a short account of the *Belfast Sewerage System*, said that the problem of the collection, removal, and purification of sewage in Belfast was one of more than ordinary difficulty owing to the large number of linen factories, mills, gas and chemical works, foundries, rope works, and distilleries in the city, and also to the situation of the city on Belfast Lough, the sluggish tides and large areas of shallow water of which seemed to favour the growth of the green seaweed, ulva latissima. The weed when cast up in masses on the beach and allowed to decay and ferment always gave rise to a nuisance. Professor Letts had demonstrated by experiment that if the growth of the weed was to be stopped or even considerably reduced, it would be necessary to produce an effluent free not only from free ammonia but also from those nitrogen compounds such as nitrates, the presence of which in an effluent was usually regarded as evidence of *purification.* Experimental contact beds had been found (when dealing with sewage which had previously undergone screening and about six or eight hours' septic-tank treatment) to give an effluent containing comparatively small quantities of nitrogen in any form, but these beds rapidly silted up. Percolating filter beds with revolving sprinklers were proved to be highly satisfactory, both as regards economy of space and freedom from silting up. The effluent produced, though an exceedingly good one from the point of view of purification, contained a large quantity of nitrogen as nitrates, which it was recognised would provide an undesirable amount of food for the ulva. It had been finally found by Professor Letts that by mixing the effluent from a percolating filter with sedimented sewage in about equal quantities and again treating the mixture on contact beds, the organic matter in the sewage was oxidised at the expense of the nitrates in the filter effluent, the net result being a reduction in the total quantity of ulva-growing pabulum

Professor E. A. LETTS (Belfast) said that during the past ten years he had been engaged in investigations with the object of arriving at the most suitable *Scheme of Purification for the Sewage of Belfast* and its effects on the waters of Belfast Lough. He first of all described the special conditions obtaining in Belfast and Belfast Lough. At one time the sewage of the town was discharged into the river through several outfalls, with the result that the river grew exceedingly foul, its bed became coated with black and highly offensive mud and its water turbid, while the stench at low tide and in warm weather was most offensive. The seaweed, consisting principally of ulva latissima and different species of enteromorpha, caused a considerable nuisance when washed ashore. A new main drainage scheme was begun in 1889 and included two main trunk sewers in the city discharging their contents only on the ebb tide. The condition of the river rapidly improved with the completion of this scheme, but the seaweed nuisance assumed such serious proportions as to demand public action. As a result of such action being taken a joint board was formed of the sanitary authorities concerned for the purpose of abating the nuisance by removal of the seaweed as it was cast ashore. The enormous cost of this procedure led to its abandonment and experiments were carried out by him with a view to preventing the growth of the seaweed. The details of these experiments were placed before the section in a very graphic and lucid manner by Professor Letts, who stated that the results were such as had been given by Dr. O'Neill in his paper.

Dr. R. J. EWART (Liverpool) assistant medical officer of health for Middlesbrough, presented a contribution dealing with some features concerning the *Sewage Pollution of the Tees Estuary.* After describing the formation of the estuary and giving a short account of the changes which had taken place during the past 25 years, not only in its configuration but also in the methods of disposal of the local sewage, water carriage having been adopted, he gave the results of bacteriological investigations which he had made in connexion with cockles and mussels collected from the banks of the estuary. The mussels were collected, 50 or 100 at a time, from all parts of a bed and indiscriminately taken as regards position, those under one and a half inches being discarded. They were taken immediately to the laboratory and scrubbed in sterile water, the hands of the investigator being covered with sterile rubber gloves. It was found that bacillus coli slowly became overgrown by the commoner organisms, and that the process was less rapid at the lower temperatures than at the higher. Bacillus typhosus showed much the same viability except that its periods were about halved, and under ordinary conditions it was usually overgrown in a week. The conclusions which Dr. Ewart came to as the result of his investigations were that it was possible to obtain mussels free from all evidence of sewage pollution; that there was a close relationship between size, number, and sewage pollution, for it appeared that where the mussels were of sufficient size to be marketable and were in sufficient quantities to be worth gathering, evidence of pollution was marked. He further found that the number of bacillus coli in the mussels corresponded closely to the environment, so that the mussel could not be regarded as a filter accumulating harmful organisms; the mussel did not seek these organisms, they were, so to speak, thrust upon it. Broadly speaking, a fall in the proportion of organisms growing at 20° C. compared with those at 37° C. corresponded with sewage pollution, and the same might be said of spore-bearing forms. He considered that mussels could not be looked upon as safe, especially when it was remembered that they were apt to die in transit to inland towns, in which case the bacterial contents would rise by millions. He concluded by discussing the forms of illness which might arise from eating mussels. He divided them into two classes. The first he called "toxic," as being due to the absorption into the system of organic poisons present in the substance of the mussel itself, and the second "bacterial," which he subdivided into general and specific infections.

Professor DUNBAR (Hamburg) said that the treatment of sewage effluents in tidal waters had at one time been considered an easy task, and only lately it had been realised that danger would arise from turning crude sewage into tidal waters. Greater importance had of late years been attached to the question from the fact that epidemics of typhoid fever had occurred through the consumption of shell-fish taken from waters into which sewage had been discharged. Sewage must be treated so as to kill all pathogenic organisms. This was formerly thought to be quite easy, but it was now known that it was impossible to disinfect crude sewage. In Hamburg after the great cholera outbreak of 1892–93 it was considered necessary that the sewage of the town should be sterilised, and with this end in view proposals were made to add lime to the crude sewage. The cost of adding lime in the proportion of 1 part to 1000 of sewage would be very great, and as it was impossible to kill bacillus typhosus even with 1 part in 500 the cost would be prohibitive. Crude sewage could not be disinfected. Bacteria coming from the intestine were found to be wrapped up in mucous matter, and the difficulties attending disinfection could be overcome by septicising, but for this purpose very large tanks were necessary, so that the question was whether it would not be cheaper to purify before disinfecting. In Hamburg all sewage coming from fever hospitals and emigrant stations as well as the waste water from the Hygienic Institute and disinfecting plants was disinfected. Where typhoid fever patients were nursed in their own homes official disinfectors were sent who explained the importance of, and the mode of, disinfecting the discharges.

Dr. W. J. WILSON (Belfast) gave an explanation of the working of an ingenious apparatus, which he showed to the meeting, for isolating bacillus typhosus from drinking water.

Sir PETER O'CONNELL (Belfast) said that the existence of differences of opinion on the question under discussion was evidence of the difficult nature of the problems to be solved. The most important fact to bear in mind was that the science of sewage purification was well able to deal at no prohibitive cost with the sewage of a town even as large as Belfast, and of turning out an effluent as pure chemically as many waters used for domestic purposes, but this very effluent on account of its purity was undesirable where local circumstances favoured the growth of seaweeds.

The PRESIDENT assured Professor Dunbar that the difficulties connected with the disinfection of crude sewage were fully realised in Ireland. He pointed out that they were not alone scientific difficulties, but those associated with storm overflows, for it would be of little use to disinfect the sewage to the neglect of storm water. He spoke with approval of the steps which were being taken in Hamburg to destroy infective organisms. He asked Professor Letts whether he had made any experiments as to the efficacy of sulphate of copper in the destruction of ulva latissima.

Professor LETTS replied that he had experimented in that direction and had found that a very small proportion of sulphate of copper did kill the ulva. He had calculated that the cost of an experiment on a practical scale would be about £500, and he thought it was well worth considering whether two or three doses might not be effective if applied at the proper season. While agreeing with Professor Dunbar as to the difficulties of disinfecting sewage before it was discharged into a river, he pointed out that crude sewage was a source of danger in localities where bathing was indulged in.

Dr. T. CARNWATH (Manchester) said that in connexion with the question of oyster and mussel contamination two facts should be [illegible] of bacillus coli [illegible] sewage pollutio[illegible] Viallanes had found that when mussels or oysters were placed in water which had been made turbid they rapidly rendered it clear by a peculiar process of filtration. It had been also found that the amount of water which could be filtered in this way per hour by the Portuguese oyster was 5·5 litres, by the mussel 3 litres, and by the French oyster 1 litre. A mussel would thus "absorb" or "ingest" in the space of one hour the organic matter, and incidentally sewage bacteria, if such were present, contained in three litres of water. It might be expected, therefore, that a considerable number of bacillus coli communis would be found in the mussel, but his observations had shown that although the mussel from its mode of life was exposed to considerable risk of infection, it did not when healthy furnish conditions favourable to the multiplication or survival of the organism. There was, indeed, sufficient evidence to show that the conditions were distinctly unfavourable. If infected mussels were placed in pure water they gradually rid themselves of bacillus coli, over 99 per cent. disappearing within the first few days. A quarantine period of even a week would be sufficient to reduce the number of organisms enormously, so that the risk was also lessened of the mussel serving as a means of transmission of occasional and much less resistant pathogenic organisms such as bacillus typhosus or the cholera vibrio.

The PRESIDENT said that they would no doubt be in [illegible] shell-fish being [illegible]. Safety to the [illegible] before its consumption in pure water.

Mr. P. C. COWAN, M.Inst.C.E., engineering inspector to the Local Government Board for Ireland, expressed his gratification at the possibility of an early solution of the Belfast sewage problem. If the inhabitants were becoming impatient at the length of time which had been taken in arriving at that solution they must recognise, as Professor Dunbar had pointed out, that modern problems in connexion with the purification of sewage were of extreme complexity.

Dr. J. J. PATERSON, assistant medical officer of health of St. Helens, in a paper dealing with

Measles in Schools,

[illegible] of children day by day from [illegible] bringing them into close con[illegible] were eminently favourable to the rapid propagation of infectious disease, but at the same time, with efficient administration, those very conditions [illegible] with a widespread outbreak of measles which occurred early in the present year. Those measures had for their key-stone a section of a private Act which required teachers in public elementary schools in St. Helens to notify to the medical officer of health any cases of infectious disease occurring among children under their charge. The exclusion of centres of infection was thus rendered possible, but in spite of prompt exclusion it was found in the end necessary to close the infant departments of a large number of schools in the town. This failure to stop the epidemic by means of individual exclusion was mainly due to the want of intelligent coöperation of [illegible]ation of infected children. Dr. [illegible] opinion that much might be done [illegible] this direction by the adoption of systematic home visitation by a capable health visitor.

Dr. D. J. MACKENZIE (Glossop) said that he regretted the deletion of Article 101* from the Code, for an entire school had now to be closed in order that the Government grant might be obtained. He was of opinion that where measles had taken hold in a school there was little possibility of stopping its spread. He pointed out that in Austria-Hungary when one or two cases of the disease occurred in a class that class was closed for a period of two weeks. He considered that the reason why adults were not attacked was because they were immune from having had the disease in childhood.

Dr. W. T. BROOK FOX (Blyth) said that, as in so many other public health matters, the financial side bulked too largely, and that was one reason why there was in so many districts compulsory notification of erysipelas but not of measles. It was often only when the Government grant was imperilled that a school was closed. He expressed the opinion that there was an increasing tendency among parents to isolate the children who were infected, even before medical advice had been sought.

Mr. HERBERT JONES (Hereford) said that it was very unsatisfactory to find that even after the adoption of the admirable administrative measures detailed by Dr. Paterson, resort in the end had to be made to the clumsy practice of closing large departments of the St. Helens schools. He pointed out that there were two methods of isolating an infected person—one in which the patient was kept apart from those who were well and the other in which the uninfected were kept away from the infected. The latter method he had carried out in the Rhondda Valley and in Herefordshire by displaying in an infected house a card on which was printed in large type the name of the particular infectious disease concerned, and a request that no person should be admitted to the house except the regular occupants or those whose services were absolutely needed.

Dr. A. WALKER (Edinburgh) said that in Edinburgh there was a tendency to organise a crusade against the notification of infectious diseases, and care should be taken not to push measures of control too far. Special attention should be paid to the closing of schools at the earliest possible moment. He looked forward to the time when they would be able to lay by the heels the very illusory microbe of measles, for there was at present no evidence of the precise prodromal period of the disease. He congratulated Dr. Paterson upon having given a very useful and practical paper on a not very grateful subject.

The PRESIDENT said that the exposure of warning cards as suggested by Mr. Herbert Jones was likely to be resented in many districts.

Dr. PATERSON, replying on the discussion, said that closing a school during the incubation period was not effective in a very general epidemic on account of "mixed crops" or crops occurring at irregular intervals, and because of re-infection after opening the school. He emphasised the importance of preventing young children from becoming infected.

Dr. A. W. GILCHRIST (Nice) read a paper on the

Endemicity of Influenza,

in which he stated that a disease generally recognised as influenza had prevailed continuously over a wide extent of the civilised world during the past 20 years. Although bacteriologists had failed to assign a distinct specificity to the disease, there was no doubt as to its being susceptible of clinical characterisation and recognition. He pointed out a certain number of general analogies between tuberculosis and influenza and expressed the opinion that it was incumbent upon those responsible for the public health to inquire into the conditions which were presiding over the transition of influenza from the pandemic and epidemic into the endemic stage.

Dr. J. B. STORY (Dublin), in a paper on the

Neglect of Physical Education in Primary and Secondary Schools,

called attention to such neglect in the schools in Ireland and pointed out that in other countries, notably in Sweden and Germany, the State had made regulations for physical education. He animadverted on the fact that upon neither of the boards of education in Ireland was there a representative of the medical profession as such. The two medical men who happened to be on the boards were there [illegible] tives of rival collegiate institutions. He [illegible] appointment of direct medical representatives.

PSYCHOLOGICAL MEDICINE.

THURSDAY, JULY 29TH.

President: Dr. T. OUTTERSON WOOD (London).

Dr. A. T. SCHOFIELD (London) read a paper on

The Present State of Medical Psychology.

He contended that the idea of the scientific use of the mind in disease by either the medical practitioner or the patient had hardly as yet in this country entered the sphere of serious medical thought, although everywhere on the continent of Europe and in the United States of America it was scientifically studied and seriously discussed. He asked whether it was in accordance with enlightened views or sound practice in medicine that a subject so fraught with powers for good and evil, which were everywhere used, should be nowhere taught He then handed in returns which he had obtained from our 42 leading universities and schools of medicine in Great Britain and Ireland. The following were the three questions sent. 1. Have you any lectures on psychology other than those on insanity? 2. Have you any means of instruction on psycho-therapeutics or the use of the mind in medicine? 3. Have you any text-book in use on this subject? The answers received were so largely in the negative that it was quite clear that this subject formed no part of the ordinary medical curriculum. There were one or two brilliant exceptions in some of our larger schools, which showed, however, that a beginning was being made. Dr. Schofield then proceeded to remark that, although there were many optional subjects of medical study, if they were not learnt at any rate they were not practised. With psycho-therapeutics, however, it was not so, for whether he wished it or not *the physician's personality reacted powerfully upon the* patient, and though nowhere studied psycho-therapeutics was unconsciously practised. The eight leading psychic forces operating between the medical practitioner and the patient were then enumerated and the force and action of each were stated. *They were, in brief, the practitioner's reason,* emotion, and will, the same attributes in the patient, and the physical and psychic environments. Many illustrations were given of the power of the mind over the body in disease, and the paper concluded with two considerations showing the urgency of the subject. The first was the rapid increase of functional nervous diseases in which, of course, this treatment was peculiarly successful, as lately pointed out by Professor William Osler in urging the general teaching of psycho-therapy. The second consideration was the enormous increase of quackery in the centres of civilisation. Dr. Schofield quoted the concluding sentences of a leading article in the *British Medical Journal* which stated that the only way in which quackery could be destroyed was the production of an intellectual soil in which it could not grow, and it was for this soil that he pleaded, and asked that mental therapeutics might form a part of the ordinary curriculum of every medical student.

The paper was supported by Dr. T. D. CROTHERS (Hartford, U.S.A.), Dr. HELEN BOYLE (Brighton), the PRESIDENT, and others.

Dr. C. A. MERCIER (London) contributed a paper entitled

Somatic Delusions and Local Lesions.

In this paper, which was read by the honorary secretary, Dr. Mercier related the case of a man, aged 36 years, formerly a clerk, who had a persistent delusion to the effect that his bowels were obstructed. He frequently refused food on the ground that it would never pass from him. His abdomen was shrunken and his bowels were moved several times a week. He had also one other delusion—namely, that he had been ravished per rectum by a foreigner, and he further imagined that he had in this way contracted syphilis, which he regarded as the cause of his obstruction. The delusions existed for years. He occasionally did a little work, but he spent his time chiefly brooding over his misery. As he lost flesh, in spite of copious feeding, his chest was examined, whereupon consolidation of the whole of the left lung was revealed, although there was an absence of the usual symptoms. After two years' illness he died, apparently from exhaustion. At the necropsy the stomach and duodenum [illegible] found healthy, but the remainder of the small intestine [illegible] diseased, the solitary glands projecting as dark red succulent-looking nodules, with a certain amount of ulceration. The ulcers were circular, the largest about the size of a sixpence, one of which had perforated and caused peritonitis. The large intestine was normal, but on the posterior wall of the rectum, four inches above the anus, there was an irregular ulcer of the size of half-a-crown, demonstrating the unmistakable existence of recent tubercle. The liver appeared normal, but behind and below the right lobe there was a spherical tumour of the size of a cricket ball enclosed in a glistening capsule On section its contents were caseous. The left lung was consolidated and riddled with cavities. The right lung was emphysematous and displayed miliary tubercles. The brain and other organs appeared normal. This case was a good instance of the difficulties that attended the recognition of bodily diseases among the insane. There were no pulmonary symptoms, neither were there abdominal pain or other indications of the peritonitis from which the man died. It would appear that the character of the delusions was connected in some way with the seat of the local lesions. The delusion that his bowels were obstructed corresponded with the fact that the intestines were diseased. The delusion that he had been ravished per rectum corresponded with the existence of a large ulcer in that part of the bowel. A crude hypothesis would be that the bodily disease was the cause of the delusions, but ulceration of the intestines was frequent enough without any concomitant delusion, and the lung was much more completely diseased, yet no delusion was referred thereto. A more plausible hypothesis would be that the cœnæsthetic sensations from the diseased bowel determined the localisation and character of the delusion in a person predisposed to insanity, or actually suffering from mental disorder. Many insane persons, however, were the subjects of gross disease, and yet it was rare to find that the delusions had a reference to a diseased organ. There was no reference of this patient's delusion either to the lung or to the large abscess, which probably at one time had been active, neither was there any reference of the delusion to liver or loin. There was evidence of long-existing disease as well as recent disease, but the facts seemed insufficient to warrant the assumption that such disease coloured the delusions. A third possible causal connexion between the delusions and the intestinal lesions offered itself. He (Dr. Mercier) had long insisted on the existence of a trophic function of the cerebral convolutions and on the disturbance of metabolism, sometimes widespread and shallow, sometimes restricted and profound, that attended that disorder of the function of the convolutions which was otherwise manifested in insanity. Insane persons appeared to become starved to death from incapacity of the tissues to assimilate nourishment in spite of being fed abundantly. The condition of the skin and its appendages was a frequent example in chronic insanity. Insanity consisted of disorder of conduct, disorder of mind, and disorder of metabolism, but these three were seldom proportionate to one another. The metabolic disorder in insanity was sometimes strictly localised. He had recorded a case in which all the nails of both fingers and toes were shed after an attack of acute insanity. It was common knowledge that the nutrition of tissues might be seriously disturbed by disorder of the ganglia from which their nerve-supply issued, as exemplified by the eruption of herpes, the acute bedsore of special disease, and the glossy skin of hemiplegia. He contended that the highest centres as well as the lowest and middle ranks of nerve centres exerted a trophic function. The circumstance that the delusions of the patient already mentioned had direct reference to his bowels was evidence, in Dr. Mercier's opinion, that the derangement affected with greater severity that portion of the cerebral convolutions in which the bowels were prominently represented Following the opinion of Dr. Hughlings Jackson that in every part of the convolutions the whole body was represented, but that it was not uniformly represented, it might be supposed, though not yet proved, that there was predominant representation of the viscera Moreover, it might well be that one viscus had predominant representation in one part of the area and another in another. In the case of this particular patient the area of convolutions most gravely disturbed was that in which the viscera were represented, and more especially in that portion in which the bowel was *predominantly represented. The derangement of function* did not appear to spread widely, for there was but little disorder of mind or conduct beyond that which had reference to the bowel. The hypothesis that most commended itself to him was that the structural disease of the bowel was secondary to and consequent upon the derangement of function of the cerebral centre in which the bowel was predominantly represented. He suggested that the nutrition of the bowel was so lowered that it fell an easy prey to the tubercle bacillus and resulted in the tuberculous ulcers. The existence of a local lesion in every case of somatic delusion was not necessitated by this hypothesis. In the case in question the lesion required as much the existence of the tubercle bacillus as it required weakness of the bowel for the bacillus to act upon. Tuberculous ulceration of the small intestine was not common and of the rectum very uncommon. These organs, unlike the lungs, were highly resistant to the tubercle bacillus and needed some very special preparation to render them vulnerable. Even supposing that no organ could, until its metabolism were lowered and damaged, become a prey to the tubercle bacillus, it was certain that the failure or alteration of the nerve-supply from the convolutions was not the only condition of such failure of metabolism, so that the absence of delusion referred to the lung did not militate against the hypothesis. This last hypothesis, strange as it at first appeared, satisfied the facts of the case and was not inconsistent with our general knowledge of the operations of the nervous system, and to this he ventured to commit himself.

The PRESIDENT congratulated the section on hearing the valuable paper from Dr. Mercier, who, he regretted to say, was absent on account of ill-health.

Dr. W. R. DAWSON (Dublin) said that he was much interested in the hypotheses advanced in the paper. He was inclined to think that diseases occurring in persons of a suspicious or morbid temperament might be productive of insane delusions. He described a case of recurrent melancholia that came under his observation from time to time. The patient in question had some slight affection of the nose, which was magnified during his attacks of depression into a delusion the insane nature of which he appreciated when he recovered. Dr. Dawson said that he was not so certain of the trophic influence of the cerebral convolutions, and that even some doubt had been expressed on the trophic functions in the lower centres, as instanced in some experiments on a dog with division of the spinal cord. He quoted Professor James's theory of the emotions as bearing on the subject, and to some extent controverting the third hypothesis to which Dr. Mercier committed himself.

Dr. G. E. SHUTTLEWORTH (London) read a paper on

Mongolian Imbecility.

He said that the subject of so-called Mongolism had attracted attention, in consequence of the recent publication of papers by Dr. W. Bertram Hill, Professor Sante de Sanctie of Rome, Dr. Meltzer of Waldheim, and Dr. Babouneux of Paris, as well as in consequence of an exhibition of 14 or 15 cases at the Royal Society of Medicine. The material upon which his paper was based consisted of about 350 cases, a fair proportion of which he had previously seen, in the course of his official connexion with the Asylum for Idiots at Earlswood, the Royal Albert Asylum, and the imbecile institutions of the Metropolitan Asylums Board, as well as in private practice To the medical officers of the institutions mentioned (and to others) he was indebted for up-to-date particulars and statistics, and especially to Dr. D. W. Hunter, assistant medical officer at the Royal Albert Asylum, Lancaster, for a valuable collection of illustrative photographs. After glancing at the history of the subject and suggesting that till within the last 40 or 50 years the Mongolian type of imbecility had been confused with cretinism, he said that the credit of pointing out the distinctive features of this type was due to Dr. John Langdon Down, who in 1866 propounded a theory of ethnic degeneration occurring in children of European parentage, of which the Mongolian was the most striking instance. The facial aspect with obliquely placed palpebral fissures, squat nose, fissured lips and brachycephalic head, furnished with sparse wiry hair were some of the points of resemblance to the Mongol or Kalmuck characters, though there was an absence of the high cheek bones so marked in the latter. Curious abnormalities of hands and fingers were seen in Mongolian imbeciles, *although they did not exist in real Mongols.* However, the resemblance to these Easterns was sometimes so striking as to suggest to the lay mind the *sobriquet* of "John Chinaman" as appropriate to a feeble-minded boy of this special type. The type was a fairly common one amongst imbeciles in England. Dr. R. L. Langdon-Down said that it was seen in 10 per cent. of his cases, and in the large English institutions it figured in about 5 per cent. of the inmates. The frequency of the type was probably less in France, Germany, and Italy, but in Scandinavian countries and in some, at least, of the American institutions for the feeble-minded it was as great as in England. With regard to the etiology of this condition, it seemed likely from the institution and other statistics in his possession that the preponderant causative factor was the reproductive exhaustion of the mother, who in a large proportion of cases were approaching the climateric, and in others was debilitated by illness, &c., during pregnancy. Mongols were in a majority of cases the last children of long families; occasionally, however, they were the first-born, procreated at a time when (as Dr. G. F. Still has suggested) the reproductive function of the parents might not have been established in full vigour. Dr. Shuttleworth cited numerous figures as supporting the above views—e.g., at the Royal Albert Asylum the mothers of 41 Mongol children out of 120 tabulated cases were over 40 years of age, and out of 107 tabulated 68 appeared to be last born children and 12 to be first-born; at Earlswood 46 out of 98 Mongols were stated to be last-born. As already mentioned, 41 mothers of Mongols out of 120 cases at the Royal Albert Asylum were over 40 years of age; of these mothers, one was stated to be 47 years of age, three to be 46 years of age, *and six to be 45 years of age at the date of birth of the* Mongol child. Statistics differed as to the influence of neuropathetic heredity in these cases. Dr. Hjorth and Dr. Carson traced but little in their cases. At Earlswood it was stated to exist in about 25 per cent. Personally Dr. Shuttleworth, forming his judgment on private rather than on institutional cases, was inclined to attach considerable importance to this factor. With regard to the etiological *influence of parental syphilis, his experience did not coincide* with Dr. G. A. Sutherland's experience, that it was a frequent factor, and the statistics of the Royal Albert Asylum, of the Keller Institute, and of the Eastern Counties Asylum lent no support to that view. Dr. Shuttleworth had not been able to trace many cases to parental alcoholism, though maternal alcoholism might well prove to be a causative factor. With regard to family history of tuberculosis. formerly considered a frequent cause, his present statistics did not confirm the view he formerly held, that the taint [illegible] as compared with o [illegible] to tuberculous disea [illegible] was inclined to think, however, that any depressing influence, toxic or otherwise, affecting the mother during generation might tend to the production of "Mongol" offspring. Amongst the anatomical peculiarities which characterised the class Dr. Shuttleworth mentioned brachycephalism, [illegible] normal, thus differing from cases of sporadic cretinism. Macroscopically the brain, which was often of fair weight, had coarse convolutions, with deficiency of secondary convolutions, and annectant gyri, the sulci being shallow, and microscopically Bourneville had remarked "rarefaction of cells" and thinning of the fibres of the Exner net. As with the physical so also was there a resemblance of mental characteristics, such as general backwardness of development, want of originality, but remarkable imitativeness. This latter quality was an aid in training, and, as a rule, Mongolian imbeciles, excluding of course low grade cases, were capable of some amount of education, and even of some degree of industrial usefulness of a simple mechanical kind. But (as [illegible]

imbeciles, owing *to their proneness to invasion by tubercle,* especially about the age of puberty. Their conclusions might be briefly summarised as that of permanent "immaturity."

Dr. R. L. LANGDON-DOWN (Hampton Wick) showed some interesting print impressions from the hands of Mongolian imbeciles, the chief lines being two in number instead of the usual three. The deficiency of stature he estimated as due to the short neck and proportionate decrease in the length of the extremities as compared with other imbeciles. He regarded the condition of the jaw and palate as being accentuated by mouth breathing, which was common. He frequently found that Mongolian imbeciles were born after a prolonged rest from child-bearing.

Dr. C. CALDECOTT (Redhill) referred to the fact that most Mongols died before the age of 20 years. In his experience at Earlswood he had only seen four cases over that age, and then the characteristics tended to disappear. In the records of the 158 cases that had died there were only two in which any doubt existed as to tubercle being the cause of death. He considered that thyroid treatment in these cases was highly detrimental.

Dr. SHUTTLEWORTH, in reply, said that he did not find tubercle quite so rampant in private practice in these cases, but admitted that Mongols were prone to invasion by tubercle and frequently died therefrom.

FRIDAY, JULY 30TH.

Dr. W. R. DAWSON (Dublin) opened the day's discussion with a paper entitled

"*Considerations upon the Report of the Royal Commission on the Care and Control of the Feeble-minded.*"

He said that in his opinion the state of affairs revealed by the investigations of the Royal Commission was exceedingly unsatisfactory. Even in England it was found that 0·83 per cent. of the population suffered from mental abnormalities of some form or other, of whom a considerable proportion—about a fourth—required immediate provision; whilst in Ireland the proportions both of mental defect and of undealt-with cases were much larger. There was, therefore, urgent need that some attempt of an organised and coördinated kind should be made to deal with the whole class of mental defectives. In considering the problem before them the fundamental idea adopted by the Royal Commission was the duty of the State to protect all persons who were prevented by mental defect from taking part in the struggle of life, and to include their property within the scope of its protection. The work had to some extent already been performed by a number of different agencies, but the Poor-law authorities had been paramount in dealing with the uncertified cases in the lesser degrees of mental defect. The evidence showed that the Poor-law had been most inefficient in this connexion; that it was mental defect and not any social circumstances arising therefrom which constituted a claim on the commonwealth; and that the very varied character of the different classes of defect and the highly special nature of the methods of dealing with them rendered it essential that these cases should be in the hands of a special department, with a strong central authority directing, controlling, and coördinating the whole. He was in hearty agreement with this conclusion of the Royal Commission and with the view that the central authority should be primarily medical. The peculiar social consequences of mental defect rendered it necessary that there should be close coöperation between the judicial and administrative authorities, and therefore the amalgamation of the Lunacy Commission with the Chancery Visitors in forming the central authority seemed to be justified. The Royal Commission desired to retain as local authorities the present county councils, while checking any retrograde or undesirable tendencies on the part of these bodies by the power of the central authority. The management of the institutions, he considered, might be left in their hands subject to certain restrictions, but the asylum medical service should be turned into a State service on similar lines to those recommended for the Irish Poor-law medical service, whereby it was suggested that the appointments should be made by a central council as the result of examination, and that the salaries of the medical officers should be paid from Imperial funds, leaving the management in other respects in the hands of local bodies. Regarding the detailed recommendations he thought that some were open to question. Thus he doubted whether "oversight"—which apparently was equivalent to registration only—or even certification would be of any use apart from detention in providing care and control. He accepted with some criticism the change in nomenclature, substituting the terms "mentally defective" and "hospital" for "lunatic" and "asylum." The history of the institutional treatment of insanity showed a continual effort to mitigate the unpleasant sound of the terms used in connexion with it. The classification of the mentally defective into nine groups he deemed unnecessarily elaborate. Thus the separation from the class of "persons of unsound mind" of "those whose mental abnormality happened to be due to age or decay of their faculties" was devoid of utility. Likewise the moral imbeciles and mentally defective epileptics, inebriates, and deaf and dumb, or blind, might be merged with the other idiots, imbeciles, and feeble-minded. Thus four classes would suffice—viz., "persons of unsound mind," "idiots," "imbeciles," and "feeble-minded," the last three differing only in degree. The constitution and powers of the central authority seemed upon the whole satisfactory, especially the preponderating importance assigned to the medical element and the provision for increased inspection. Those at present connected with the Chancery Division apparently were opposed to amalgamation, but it was to be hoped that their objections would be overruled in the promotion of what it was proposed to call the Board of Control, which might be developed in Ireland as well as in the sister countries. He advocated the appointment of assistant Commissioners and also that of certifying medical practitioners, the latter to act on behalf of the county councils. Experience had taught him that it was far less easy to decide upon the status of a case of feeble-mindedness than was usually supposed, and that with the increased work thus created a special body of practitioners would be required. He questioned the procedure as regards the adoption of plans and estimates for buildings as being cumbrous and involving undue expense and delay. The submission of plans and estimates first to the Board of Control, next to the Local Government Board, next to the Secretary of State, and finally back to the local authority, was surely unnecessary. He agreed with one of the Commissioners in his objection to the system of compelling medical practitioners and other public officials to notify to the local authority all cases of mental defect coming to their notice, unless public assistance was required. Such a procedure was too inquisitorial and would give rise to friction in practice. He approved of the suggestion that patients liable to frequently recurring attacks such as would be likely to relapse should be reported on and dealt with specially. In connexion with the admission of patients he approved of Dr. J. C. Dunlop's objection to the proposal that the judicial authorities should be given some discretionary power as to the method of disposal of mentally defective persons. He regarded the intervention of the judicial authority as unnecessary in the great majority of cases. In Ireland there had never been intrusion of the judicial element as regards paying patients and no disadvantages or abuses had arisen from its absence. It, moreover, tended to getting patients under special treatment in the early stages and thus promoting their recovery. He urged that the difference existing in Ireland as regards procedure for public and for paying patients should be retained if the judicial authority was really indispensable for the former. The recommendations that the education and training of defectives be removed from the control of the ordinary education authorities received his approval. He also urged the desirability of creating special classes rather than special schools in the first instance. He believed that in Ireland, at all events, much greater difficulty would be experienced in getting parents to send their children to the latter, while the former had advantages in the case of transfer of pupils to and from the ordinary classes. The recommendations regarding the criminal and inebriate and epileptic mental defectives might be accepted. He also concurred in the advice that institutions for sane epileptics should be under the same control, and he ventured to suggest that the institutions and homes for sane inebriates might also with advantage be placed under the same control. He had hoped to find the system of family care in the treatment of the mentally defective more highly recommended. The value of this system, so easy of introduction, so elastic, so successful wherever fairly tried, and so inexpensive, had escaped proper recognition. He considered the report a monument of industry and a mine of information, and said that it should awaken the nation to the existence of its mental defectives and should promote legislation for their proper care and control.

Dr. SHUTTLEWORTH (London) referred to the history of the Education Act of 1899, which was legislation for defectives not to be graded under the Idiots Act. It failed, however, as being permissive only and not compulsory, and the result was that probably only one-third of the cases were dealt with by the authorities. Moreover, the defectives on reaching the age of 16 years had no authority to care for them. He objected to classing cases of feeble-mindedness of a mild character under the general heading of mental defectives, which in its modern connotation was to include lunatics. He thought it might prevent parents from consulting their medical attendants from fear of official interference. He also mentioned that many children, although subnormal at the age of six years from immature development, were quite normal at the age of eight years, and that they would needlessly be classed with mental defectives.

Dr. W. J. MAGUIRE (Belfast) said that speaking from the physician's point of view he hoped that wards would be set apart for mental cases in the general hospitals. There was at present only one institution for imbeciles in Ireland—namely, the Stewart Institution, with 100 beds. Places were needed where mental defectives could earn their living under supervision.

Mr. P. J. FAGAN (Dublin) said that he spoke as one of the inspectors of reformatories in Ireland, having under his cognisance about 8000 children, taken from the waifs and strays of society. He referred in terms of approval to the Government offer to increase the grant from 5*s.* to 7*s.* per week for mental defectives, which would enable the managers of schools to deal with the whole group adequately. Many cases, coming as they did from a miserable environment, required practical training rather than book knowledge and were improved thereby.

Dr. E. C. BIGGER (Dublin) said that his experience as a Poor-law inspector taught him that Ireland was behindhand in the care of the feeble-minded. Many, he considered, might become good citizens if properly looked after in early life. While so much was being done in asylums, too little was done in preventive measures.

Dr. CALDECOTT spoke of the work achieved at the asylum for idiots at Earlswood during the past 60 years. All types of feeble-mindedness from the minor to the deeper grades were received at that institution. He considered that its special schools and shops were even better than those of the London School Board. He deprecated certain of the recommendations as tending to curtail voluntary effort and he thought that the financial considerations had been greatly under-estimated.

Mr. C. S. MORRISON (Hereford) expressed a hope that what was at present voluntary in the Education Act for defectives should with future legislation become compulsory.

Dr. J. M. MACCORMAC (Belfast) stated that he saw many cases of incipient insanity at the hospital for nervous diseases, and he considered that many cases might be saved if taken proper care of in early childhood.

The PRESIDENT commented on the difficulty experienced in providing for the large group of the uncertified mental cases and regretted that no proposals had been submitted by the Royal Commission for dealing with the ordinary inebriate, who was commonly regarded as sane yet was incapable of taking care of himself.

Dr. DAWSON, in his reply, estimated that there were about 10,000 mentally defective children in Ireland for whom at present there was no provision.

The PRESIDENT, in terminating the proceedings, expressed the gratification of the section at the presence in it of Lady Aberdeen, who had done such good work in connexion with tuberculosis amongst the poor in Ireland, and he trusted that she would extend her sympathetic help in the alleviation and better care of the mentally defective, which was a question of national importance.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

THURSDAY, JULY 29TH.

President, Dr. STCLAIR THOMSON (London).

Dr. P. WATSON WILLIAMS (Bristol) gave a demonstration on the cadaver of his modification of Killian's radical operation on the frontal sinus and ethmoid cells. He showed the different stages of the operation and demonstrated the steps as he proceeded, pointing out the dangers of entering the cranium through the olfactory plate, and the means of avoiding them, which his operation afforded, by giving a full view of the whole field and by keeping external to the middle turbinate. The operation consisted in the formation of an osteoplastic flap which was turned outwards to enable the interior of the nasal passage to be seen and treated accordingly. The ethmoidal cells could be removed and no pockets were left without inspection, as in the case of Killian's method; there was also practically no deformity as a result. The first step was to take a radiograph of the frontal sinuses to see their extent, as they were entered from the anterior wall. The first incision was made over the previously shaved eyebrow, the inner end curving slightly downwards to the centre of the root of the nose. The incision should not go through the periosteum. This cut was subsequently prolonged vertically downwards in the middle line to the lower end of the nasal bones. The soft tissues were retracted and the periosteum incised and reflected as much as necessary to gain entrance to the frontal sinus at its inner and anterior aspect. As much as required of the anterior wall and floor of the sinus was then removed. The subsequent prolongation downwards of the incision at its inner end was then made, the knife being here carried right through the periosteum to the bone, and at its lower end was pushed through into the affected side of the nose just external to the septum and made to cut upwards as far as it would go, the remainder being severed with a specially bent saw right into the sinus. A slightly curved incision of about half an inch in length was then made through the tissues down to the bone beneath the lower orbital margin of the same side, its inner end commencing just in front of the anterior lacrymal crest, the lacrymal sac being turned outwards and an opening made here into the nose. By means of a bent probe-pointed saw or a Gigli this opening was connected with the fronto-nasal duct subcutaneously, the nasal process of the superior maxilla was then divided subcutaneously in a similar manner, the bent saw being passed from the opening in the region of the lacrymal sac into the anterior nares. This then freed the osteoplastic flap, consisting of the nasal bone, the nasal process of the frontal and superior maxillary bones, together with that small piece of the frontal which joined the superior maxillary nasal process. The facial artery was left intact. The flap was then turned outwards, and the interior of the nose and the anterior ethmoidal cells brought into view. These latter could be removed, also the posterior cells, and the sphenoidal sinus made visible if necessary. The important point in these further procedures was to keep external to the middle turbinal, a small portion of which should be left as a guide. The flap was then replaced and the operation concluded. A good forehead illumination was essential.

Dr. G. WILLIAM HILL (London) also gave an interesting demonstration, illustrated by photographs and diagrams, copies of which were given to members present, of his method of operating upon the larynx and the application of radium to these parts through a Bruning's tube by direct vision.

Dr. BRYSON DELAVAN (New York) also demonstrated Hay's pharyngoscope for the examination of the posterior nares and larynx. The instrument was based upon the principle of a cystoscope and consisted of a vertical shaft which served as a handle and a horizontal portion which served as a tongue depressor, the distal portion of which contained a small lens and electric lamp, the light being conducted along this to a suitably arranged eye-piece in the manner of the cystoscope. The small lens could be rotated so that any portion of the naso-pharynx or larynx could be examined. It was most useful for cases where the mouth could not be opened or when the patient was lying in bed. Of course, it was of no use for operative purposes. It was made by the Wappler Electric Controller Company, New York.

The Section then joined with the Section of Hygiene and Public Health to discuss

Latent Infections of the Diphtheria Bacillus and Administrative Measures required for dealing with Contacts.

This discussion is reported under the proceedings of the Section of Hygiene.

FRIDAY, JULY 30TH.

Mr. H. LAMBERT LACK (London) read a paper on

The Treatment of Cicatricial Stenosis of the Larynx.

He said at the outset that he would confine his remarks mainly to those cases of cicatricial stenosis of the larynx in children which occurred after diphtheria when tracheotomy had been performed, as in most of them the tracheotomy tube had been inserted in or near the larynx. He considered that diphtheria had no direct connexion with the stenosis, but that it was secondary to the irritation and injury caused by the high tracheotomy. Personally, he had never seen stenosis follow a tracheotomy lower down. The amount of stenosis varied from a slight fibrous thickening to an impermeable stricture. The treatment he adopted was to do a low tracheotomy and to remove the other tube, allowing this wound to close, and, if the original tracheotomy had been performed within a few weeks, the probability was that the laryngeal condition would quickly recover without further treatment. The tube in the trachea should then be blocked for longer and longer periods until the child breathed easily, when it should be blocked night and day. This might take from one to three months. He had previously tried a combination of dilatation of the larynx together with a low tracheotomy, and for this purpose he used T-shaped tubes for the upper opening, but it was found impossible to keep them clean, and he came to the conclusion that the improvement was due to the low tracheotomy, which was the only treatment he now adopted for such cases. Of course, recovery would not occur in cases attended with extensive sloughing or with necrosis of cartilage. He had since tried intubation, but had not obtained any benefit from it. With reference to almost impermeable strictures, he had hitherto regarded them as hopeless and that such patients were condemned to wear a tube all their lives, but he looked forward to the subsequent speakers for help in this direction.

The PRESIDENT remarked that the subject was one of the most interesting that had been brought before the section, and that hitherto its treatment had been one of the most difficult problems of the laryngologist. They had just heard the opinion of one of the foremost British laryngologists, and he was to be followed by Dr. Delavan, who would give them the latest experiences of intubation, which method had been, except in fever hospitals, neglected in Great Britain. Finally, they would have the benefit of hearing the views of Dr. Delsaux, than whom none was more capable of describing tracheo-laryngostomy, and, finally, they would hear Dr. Mayer, of the land of O'Dwyer.

Mr. LACK, in reply, said that he had generally been able to remove the tube in from one to three months. He passed round for inspection one of the plugs which he used in his earlier methods. He had found that an intubation tube introduced from below was more comfortable than one inserted from above; he also gave illustrative cases of treatment in this respect.

Dr. BRYSON DELAVAN (New York) then read a paper on

The Treatment of Cicatricial Stenosis of the Larynx by the Methods of O'Dwyer and Rogers.

He said that, in his opinion, three things were essential in the successful management of these cases—namely, relief of the stricture, permanence of such relief, and as little injury to the parts as possible. He referred to methods previous to O'Dwyer, whose character and attainments he considered worthy of the highest regard. He thought that O'Dwyer's method comprised all the advantages, and none of the disadvantages, of the previous forms of treatment, and this had been shown abundantly by the brilliant series of cases reported by Dr. John Rogers. He referred to certain anatomical factors upon which the principles of intubation were based, and believed that cutting operations would only result in ultimate failure, because of resulting adhesions, even after long-continued dilatation and supposing that cicatrices were also excised. He stated that scar tissue in general when subjected to long-continued stretching would finally lose its resiliency, and it was upon this fact that intubation was based. For this purpose each case should have its own tube specially modified to suit the individual requirements, and the instrument should exert steady and continuous pressure upon the contracted tissues for at least one year. There were various "normal" tubes designed by O'Dwyer from casts to fit average larynges somewhat loosely, and these must be modified to suit the individual larynx, when the acute period had passed away, by passing under general anæsthesia different sizes until one was obtained which the operator considered would effect the desired result without causing sloughing. Then a special tube was made of a suitable length and with a retaining swell, which occupied the space at and below the cricoid cartilage, of the same size as in the trial tube. The neck of this special tube, which pressed upon the hypertrophied intra-laryngeal tissues, should have its transverse diameter $\frac{3}{32}$ inch smaller than the retaining swell or it would be coughed out, while the head, which rested on and in the aryteno-epiglottic folds, must have a diameter $\frac{1}{32}$ inch greater than that of the retaining swell, otherwise the tube would slip into the larynx. These measurements applied to hard rubber tubes, but with metal ones the head should be still a little larger. Occasionally a tracheotomy was essential when there was danger of the tube being coughed out, as occurred at times with hypertrophic laryngitis. Various tubes were here passed round for inspection, including a plugged or clamped tube which consisted of a removeable right-angled piece passing through the tracheotomy wound and screwing into the one already described, which effectually prevented its being coughed out. Tracheotomy should only be performed if absolutely necessary. Vulcanised rubber was an ideal material for a tube, and should first be tried, but occasionally metal was better. He referred to several clinical cases in which recovery required from one month to a few years, two years being perhaps a fair average, and he contended that no other method had yet been tried for a sufficiently long period of time to enable any definite conclusions to be drawn from it. He referred to a temporary spasm of the adductors after removal of the tube which might lead the surgeon to think that the condition was unchanged, but general anæsthesia would determine whether the dyspnœa was due to fibrous stricture or to spasm.

Dr. DELSAUX (Brussels) read a paper on

Tracheo-laryngostomy in the Treatment of Cicatricial Stenosis of the Larynx and Trachea.

He defined it as a large opening of the larynx and superior part of the trachea made permanently or at least for a long period. He excluded cases of tubercle and lupus, and thought that bronchial catarrh was a contra-indication, but considered it possible in all other cases of cicatricial stenosis of the larnygo-tracheal tube. He referred to the care required in preparing for the operation and to disinfection of the mouth and teeth. The operation could be performed under either general or local anæsthesia. The head should be held by an assistant in Rose's position during the whole of the operation. He indicated the instruments required and emphasised the importance of a good frontal mirror. He divided the operation into the following six stages: 1. The preliminary incision extending from the previous tracheotomy wound to the upper margin of the thyroid cartilage. 2. The longitudinal division of the trachea and the cricoid and thyroid cartilages, together with the thyroid isthmus. 3. The suturing of the mucous membrane of the larynx to the skin. 4. Excision of the scar tissue. 5. Introduction of a dilator and cannula, the latter having, of course, an opening at its upper part. The dilator was a rubber tube which should exceed the diameter of the trachea. Fournier introduced his cannula through a hole in the dilator. Some preferred gauze for the dilating material during the first few days, afterwards inserting a rubber tube, so that the patient could learn to breathe again through the natural passages. 6. Dressing of the wound and of the cannula to keep it in position The inner cannula should be frequently cleansed and boiled and the dressings removed as often as necessary. The mouth must be frequently cleansed. The epidermis soon commenced to grow along the granulations which lined the new laryngo-tracheal conduit The dilatation should be continued for a period varying from a few months to a year or longer, and when all the raw area was covered with epidermis the upper part of the wound might be allowed to heal, and later a plastic operation would of course be necessary and should be done at once without any safety opening, when the patient could breathe easily through the nose and was not out of breath when running. The methods that could be used in closing this aperture were next described, either with square flaps of skin or flaps elliptic in shape sutured in the median line with the skin turned inwards. A synopsis of the results of 36 cases was then given.

Dr. EMIL MAYER (New York) read a paper on the

Treatment of Cicatricial Stenosis of the Larynx.

In this paper he instanced three unusual cases in which tracheotomy had been performed. He used intubation and exhibited a special hollow [illegible] ibes could be passed slowly, t[illegible] the handle all the time—one c[illegible] its insertion. The introducer, which was here passed round for inspection, was an excellent one for the purpose. He [illegible] Dr. Rogers [illegible] wan, and [illegible] mportance [illegible] he correct [illegible] uld be no [illegible] first case was due to a bullet which entered the temple, passing downwards through the soft palate into the thyroid gland and then into the œsophagus; it dropped into the patient's stomach and was finally passed per rectum. The second case was due to post-typhoid perichondritis, and the third case was one of granuloma of the larynx, which had been previously operated upon. These were both successfully treated by intubation.

Dr. **HILL** described a laryngeal splint which he had devised for preventing transverse webs and cicatricial bands in the larynx from being reproduced after removal, instancing a case. The patient had satisfactorily worn it for about three weeks. The splint was passed round for inspection.

In the discussion Dr. A. **LOGAN TURNER** (Edinburgh) referred to the difference between the American treatment by intubation and the European by the knife. An objection to the former was the prolonged period necessary in some cases for using the tube. He had had trouble in one of his laryngo-tracheoscopy cases from œsophageal fistula, which had interfered with the maintenance of the lumen of the trachea. In case of post-operative stenosis following laryngofissure he thought that fibrolysin used locally might be of service.

Mr. H. S. **BARWELL** (London) referred to Schrötter's method of intermittent dilatation which had been successful in his hands. One reason why he had avoided intubation was his idea that the tubes required frequent removal and re-insertion.

The **PRESIDENT** said that in his opinion one lesson to be learned from the papers was the sufficiency in certain cases of a low tracheotomy in curing, and better still in preventing, the post-diphtheritic cases. Another lesson was the death knell of Schrötter's tubes, for those of O'Dwyer would do all that Schrötter's tubes could do and even more. Another lesson was the promise held out by laryngo-tracheostomy. He laid stress upon the benefit which the successful treatment of such conditions would confer on society, instancing the case of a little girl whose social life was being sacrificed due to want of laryngeal function.

Dr. **DELAVAN** briefly replied, and showed a concealed knife for the division of cicatricial bands in the anterior commissure. He stated that intubation could not be mastered in a few days, and that he thought it better for one or two specialists in large centres of population to become proficient, so that they might send such cases to them.

Dr. **DELSAUX**, in his reply, said he thought that the epidermis took up the character of mucous membrane. He had had no good results from fibrolysin. To prevent any secondary stenosis a piece of cartilage might be inserted prior to performing the plastic operation.

Dr. R. H. **SCANES SPICER** (London) read a paper upon the

Relationship of Cancer of the Throat to Abdominal and Thoracic Breathing,

which depended, amongst other things, upon posture and distension of abdomen. He illustrated his remarks upon a model made for the purpose.

Dr. R. H. **WOODS** (Dublin) showed a patient whose larynx he had extirpated, and exhibited a method which he had adopted for enabling the patient to speak. For this purpose a reed was introduced into the distal end of a tube which was carried from the tracheal opening through the nose into the pharynx, by this means reinforcing the resonance of that cavity for vowel sounds.

A short paper by Dr. J. **HARDIE NEIL** (New Zealand) was read by Mr. G. A. **BARTON** (London), on the

Surgical Anatomy of the Tonsils,

in which the author differed from Dr. D. R. Paterson as to the downward extent and relationships of the supra-tonsillar fossa.

A vote of thanks to the President concluded the work of the section.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 28TH.

President, Fleet-Surgeon J. LLOYD THOMAS, R.N.

The **PRESIDENT** delivered an address of welcome to the members of this section.

Colonel H. E. R. **JAMES**, R.A.M.C., communicated a paper entitled

"An Account of the Officers' Training Corps, with Special Reference to its Medical Branch."

He said that for reasons of expediency it was obviously unnecessary to maintain the medical establishment of the army at war strength during times of peace, and upon the outbreak of war upon a large scale a call would be made upon the civil medical profession for the completion of the medical establishment of the expeditionary force. About 50 per cent of its medical complement would consist of medical men not of the regular army medical service, and the existing reserve was totally inadequate to provide this number. A "special reserve of officers" was designed to meet the case, but under the most favourable conditions it was unlikely to produce the large body of officers required, as many men were loth to bind themselves to undertake war service in prospective, while it was also obvious that a man knowing nothing of the medical service must be at a great disadvantage under conditions of field service. Therefore the giving of a free hand to schools and universities without binding the recipients to service was a measure which promised well, even if it should not fill the special reserve and the Territorial Force as was hoped. That was the origin of the officers' training corps. The general object of the organisation was to provide officers for the regular army, for the special reserve of officers, and for the Territorial Force, and its method of working was to give a standardised measure of military training to boys and young men of the educated classes at schools and universities. The university contingents formed the senior and the school contingents the junior division of the officers' training corps. No physical examination was imposed, the only regulation being that the cadet shall be able to perform his duties to the satisfaction of his commanding officer.

Lieutenant-Colonel R. **PORTER**, R.A.M.C., read a paper on

Physical Training of Recruits in the Army.

He said that the object of physical training should be to increase intelligence, quickness of movement, power of endurance, and keenness for work; in other words, physical training meant the gradual training of the heart and lungs to accommodate themselves to the demands of muscular exertion, and the undertaking of fatiguing exercises without undue distress. The recruit on joining the army at the age of 18 years was not physically fit to undertake the duties of a soldier without considerable preparation, and it was by this system of physical training that he was prepared for the strenuous and active life which was now required of a soldier. In carrying out these exercises his body was gradually and harmoniously developed, faulty postures were corrected, and at the end of his training his standard of physical fitness was enormously increased. All this was done without any undue strain to the body, and in practice it was found that generally recruits after three or four months' training improved in weight, chest capacity, and the harmonious working of heart and lungs was well seen in their power of running one mile without distress, as shown by their respiration and pulse-rate. The methods by which this training was carried out were based on the Swedish system, which had been introduced into the British army within the last few years, and differed entirely from any system of physical training previously employed in England. The methods in vogue in the army a few years ago, and indeed in the universities and schools, were very unscientific and opposed to all physiological laws. They tended to produce a state of abnormal muscular development. What was aimed at now was the harmonious development of the whole body without strain to muscular, respiratory, or circulatory systems. Great care was taken to avoid hurry in physical training. It was impossible to obtain good results by cramming more work into the same or less time. The object aimed at in these physical exercises, particularly of the arms and legs, was not exactly the development of the different muscles engaged, but their increased efficiency and power of resisting fatigue. Generally speaking, in all recruits the trunk muscles required development to correct faulty postures acquired in civil life. Stability was necessary if work was to be performed efficiently and economically, therefore the muscles which maintained stability must be systematically developed. Over-distension of the chest was injurious, as it was liable to diminish the elasticity of the lungs and render them less efficient. But exercise performed with a good carriage of the spinal column and directed towards securing the coördinate working of the heart and lungs was in the highest degree beneficial. The judicious and progressive employment of marching, running, jumping, and kindred exercises was the best means of obtaining true coördination. The usual time occupied in training recruits so as to prepare them for the active work of a soldier was six months—namely, three months at the regimental depôt and three months after joining their respective battalions. During this time they were constantly kept under medical supervision, and if it was seen that at any time the work was too severe or likely to produce strain in any individual he was put back to a class where the exercises were more simple and work less severe.

This paper was discussed by Colonel T. H. Hendley, I.M.S. (retired), Staff-Surgeon E. Cox, R.N., and the President, after which Lieutenant-Colonel Porter made a brief reply.

Colonel T. H. Hendley, C.I.E., V.D., I.M.S. (retired), read a paper entitled

"*A Contrast between the Treatment of the Wounded under the Mogul Emperors and King Edward the Seventh, Emperor of India.*"

He said that in the time of the Mogul Emperors surgery was left to quacks or barbers, and in India to jarahs, who were combinations of both. They used salves, or plunged stumps into boiling oil, especially after gunshot wounds, which were regarded in India, as in Europe, as being poisoned. The real difference between the old and new conditions in India was that in the past there was no system; in the present the State had made itself responsible, though it must be assisted by individual effort. The main principles of the present methods were—to follow up the fighting line so that the wounded might be succoured as soon as possible after they fell; their speedy, and, as far as might be, comfortable, removal to a place of comparative safety, and then to some place at which they could be properly treated in view of returning them when fit at the earliest date to the front. When the casualties were few and not widely spread relief could usually be quickly afforded by trained persons; but if a man fell at a distance from such skilled assistance and the battle was a great one, it would be impossible to attend to all who fell even for some hours. In such cases the only hope for the individual was that his comrades or even he himself might be able to afford what was so appropriately termed "first aid." Briefly, this was to stop hæmorrhage, to apply first dressings to wounds, to put broken limbs into a position of safety, to relieve thirst, and to assuage pain by the use of sedatives, and then to arrange as soon as possible for removal from the danger zone. He desired to urge with special force the regulations which provided that every soldier should be taught so much. His own life and the lives of his comrades might depend upon his possessing such knowledge. If the "first aid" was properly understood and rendered, the experience of modern war, and especially of the Japanese war, showed the chances of recovery were enormously enhanced, and further that satisfactory "first-aid" treatment was usually sufficient to make a soldier safe until he could be transported to base hospitals, even if they were at several days' distance. So important was this training that there should be no shirking it, for every man who had not acquired it was a danger to others and a source of weakness to the army.

Lieutenant-Colonel Porter said that the Royal Army Medical Corps was now well organised, and he thought that in future this work should be left in the hands of the field ambulance.

Lieutenant-Colonel E. M. Wilson, R.A.M.C., thought that possibly there might be a tendency to teach the rank and file of the army more than was absolutely necessary in first aid and ambulance duties. He thought that it would be best to limit the training to first aid only and the application of the first field dressing, which every soldier carried.

Colonel Hendley, in reply, said that soldiers should have some knowledge of first aid, and it was not intended that they should take the place of the Royal Army Medical Corps.

Thursday, July 29th.

Fleet-Surgeon P. W. Bassett-Smith, R.N., communicated a paper on

The Diagnosis of Syphilis by some Laboratory Methods.

He first considered the microscopic demonstration of the *Treponema pallidum*, which he had not found to be of much practical use on account of the labour which it involved, although when successful he considered it diagnostic of syphilis. Turning to the macroscopic method he described the technique adopted in performing Wassermann's serum test, and some of its modifications, and concluded with the following summary of the results obtained by it. He found that almost all cases with evident primary syphilis gave a marked reaction to Wassermann's test slightly modified, using for antigen dried congenital syphilitic liver. This reaction was obtained as early as the fourteenth day after infection; in many cases admitted for chancroids the presence of a double infection was early indicated by the test; in almost all cases of early secondary syphilis with or without symptoms at the time, positive results were obtained; in late secondary stages or tertiary manifestations the results were more variable; in about 50 per cent. of parasyphilitic cases a positive reaction was present. In cases without symptoms and generally after much treatment, but with an undoubted history, a minority reacted. The reaction was specific for syphilis as far as other venereal diseases were concerned. Mercurial treatment did not appear to prevent the reaction when symptoms were present. By this method they had a valuable aid in the diagnosis of syphilis, deciding the nature of many difficult cases and early indicating the need of specific treatment.

Colonel F. J. Lambkin, R.A.M.C., read the following paper on

The Arylarsonate Treatment of Syphilis: its Probable Future Effects in the Services.

He said: In discussing the question of the treatment of syphilis by means of arylarsonates it is no intention of mine to compare it with that by mercury. The position of the latter is perhaps stronger now than it has ever been, for after having gone through various vicissitudes in the ups and downs of heated discussions, it has, especially during late years, been generally accepted as *the* specific for syphilis; nevertheless, there were, and are, cases which resist mercury in any form, cases to which mercury cannot be given owing to their extreme susceptibility to it, and for such the necessity of finding a substitute was all-important. At our last annual meeting at Sheffield I had the honour of reading a paper on the treatment of syphilis by arylarsonate salts, recording up to that date 54 cases so dealt with and with favourable results,[1] and it is my intention now to bring further evidence to prove the utility of these salts in the treatment of the disease. Since August, 1907, when I first began to use the arsenical compound, my colleagues and myself have treated over 130 cases with it. In these cases syphilis was represented in all forms and stages, from the typical Hunterian chancre accompanied by enlargement and hardening of the inguinal and cervical glands to cases showing the different forms of syphilitic rashes, as also others in the later stages with various forms of syphilitic lesions, including signs of commencing tabes. Most of these did remarkably well. In the cases of Hunterian chancre this soon softened and passed away, the majority showing no signs of return, and in many there were no further developments of the disease. Syphilitic rashes rapidly disappeared, ulcers of the mouth and throat healed, whilst the gain of body weight was most marked from the beginning; at the same time anæmia and cachexia cleared away. The most interesting effects of the treatment were seen in cases in the later stages of the disease, of which the following are a few:—

First case.—A. B., aged 45 years. The disease was contracted 24 years ago when he had a chancre followed by a roseolar rash and sore-throat, and later a profuse papular pustular eruption broke out over the body. He received what appeared to have been a very complete mercurial treatment by the internal method and chiefly by means of hydrargyrum cum creta. He had spent many years in the tropics; said that he was obliged to take the specific almost continuously, otherwise the disease was certain to break out in one form or the other; this had been the case for years past. When I saw the patient he was much debilitated and anæmic, suffered from periodic nocturnal

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[1] See The Lancet, Sept 12th, 1908, p. 809. A further paper by Colonel Lambkin describing 21 cases of syphilis successfully treated with arylarsonates was published in The Lancet of Dec. 5th, 1908, p. 1656

headache, and was subject to a peculiar swelling and redness on the
side of the nose, especially when he o
little time. On Jan. 14th, 1909, I
8 grains of arsacetin on that day. I c
every second day until 100 grains had

ourse of arsacetin
oad then. Up to

ood physique. He contracted
ed ever having a sore, but had a
r nature. He was treated at
ual course. Since then he had

plakia, as were the insides of the cheeks There was profuse leucoderma

had no further symptoms.

Fourth case.—G. H., aged 34 years. He contracted syphilis in India eight years ago, having a chancre on the penis, followed by a roseolar rash and sore throat. He went under *specific treatment at once*

cum creta. Since then he had had very many fresh outbreaks of the disease constantly, mostly of sore throats with mucous patches on the

These are a few of the most interesting cases treated by the arylarsonate salts. They are peculiarly interesting from the fact that hitherto their utility was doubtful as regards syphilis in its later stages. In forming an estimate as to how far these compounds are capable of preventing further ravages of syphilis it would be necessary to watch the progress of a number of cases which had been treated solely by them, which is a matter of very great difficulty, even in the army and navy, where men are continually being lost sight of owing to taking their discharge or to being transferred elsewhere. Among the cases treated I only saw slight toxic symptoms in two, and this was in the case of two patients both over 55 years of age. The symptoms consisted in one patient of slight colic with nausea and vomiting, in the other of browache and dizziness. All the other patients underwent full courses without interruption.

Preparation used.—The preparations of arylarsonates which were used were as follows: (1) atoxyl (arsonate of sodium); (2) soamin (amino-phenyl-arsonate); (3) arsacetin; and (4) arseno-phenyl-glycin (in vacuo). The first of these—i.e., atoxyl—was the original compound of arsenic which was tried for sleeping sickness and later for syphilis. With it I *treated some 24 cases of the latter* and with much success; no untoward symptoms occurred. Nevertheless, I was obliged to abandon it owing to the ill reports which came in concerning the danger of its use, as also after having seen four cases of total blindness which followed its use for sleeping sickness in Uganda. The second preparation, soamin, was introduced by Messrs. Burroughs and Wellcome of London. It is a sodium amino-phenyl-arsonate and almost identical with the old preparation atoxyl, except that being of a definite chemical composition and arsenical strength (which atoxyl is not), it can be administered with much greater safety and confidence than a compound liable to variation in strength as is the case with atoxyl; in other words, it is a stable preparation. Soamin has been used very extensively at the Military Hospital, Rochester-row, and with very great success, and with the exception of the two cases above mentioned none of them were followed by toxic signs. The salt is made up in solution for use and is given either subcutaneously or intramuscularly; on account of its tendency to decomposition from keeping the solution needs to be made up afresh at least daily. The dose which I have been giving is 10 grs. every second day until a total of 100 grs. has been attained. The third preparation used—i.e., "arsacetin"—was introduced by Ehrlich as an improvement on the original atoxyl.[2] He *describes it as the acetyl derivative from the latter and for* short called it "arsacetin." Of it Neisser remarks: "1. Arsacetin is certainly far less toxic than the old atoxyl, both healthy and diseased animals tolerating much larger doses of it than of the latter. 2. Its remedial action on syphilis was at least equal to the older preparation. [In my judgment this is quite borne out by my practical experience.] 3. *No decomposition of any kind in the solutions,* even when stored for a long time, could be detected; even boiling daily did not alter the solutions in any way." This preparation I use in 10 per cent. and 15 per cent. solutions. The latter has the advantage of not requiring so large a quantity of fluid for injection, consequently causing less pain than the weaker solution; on the other hand, it has the disadvantage that it deposits the salt when cold and requires to be reheated before being used, so as to bring the latter into solution again.

Dose.—I have been giving 50 minims of the 15 per cent. solution which represents 8 grains at each injection every alternate day until 100 grains have been totalled. Whether it is better to give *injections on two consecutive days, or* whether more favourable results would be obtained if they were given less often but in larger doses, has yet to be decided, but judging from the analogy of experience in
favour the former.
sacetin very extensively
, and not one case has
shown any toxic symptom. I found that in the majority of cases it promptly removed symptoms and the patient's general condition was much improved, whilst in others it failed, and recurrences took place during and immediately after a course of it; on the other hand, it very often succeeded where mercury had failed. Its beneficial effects were most apparent in the older cases (late stages), some of which responded to it in a wonderful manner. The great disadvantage of atoxyl is that it is not stable as regards strength, also owing to the liability of its solutions to decompose, thereby forming dangerous by-products, and it cannot be denied that if the risk of optic atrophy has always to be run even after a moderate dose one would hesitate before employing atoxyl. Soamin is far preferable to atoxyl, although it is practically the same salt, the fact being that it is of stable strength and consequently its toxic effects are very limited always, provided that certain points, such as using only freshly prepared solutions of it, are adhered to and always remembering

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[2] THE LANCET, Dec. 5th, 1908, p. 1682.

the liability of its solution to decompose on being stored for any time, and that they cannot be sterilised owing to chemical changes taking place on boiling. Arsacetin, besides being less toxic than either atoxyl or soamin, has the great advantage that solutions of it do not decompose on being stored or boiled, hence it is practically free from the dangers of the latter salts. Of the newest preparation—i.e., arseno-phenyl-glycin—sufficient time has not elapsed to allow of anything like a definite opinion being given; at the same time the fact of its requiring to be supplied in vacuo and the danger attached to it on its exposure to air appears to me to put it out of count for anything like general use, more especially as the little glass tubes in which it is supplied are very apt to get cracked in transit, thus exposing the salt to the air. For the present I think that the advantages are decided on the side of arsacetin. As already stated, it has been used a great deal by myself and with no untoward effects. As a rule I have employed it alone, whilst in other cases I have made use of it in combination with mercury, giving both simultaneously with very good results. With more extended experience the advantage of employing mercury and arylarsonates together in certain cases of syphilis is becoming daily more impressed on me. One thing is certain—i.e., that many cases of syphilis which responded readily to one of those agents may be totally unaffected by the other and *vice versâ*, and this without any reference to their susceptibility to either, which leads me to the conviction that there are different strains of spirochæta pallida which are affected differently by mercury and arsenic. The presence at the same time of these different strains in the same individual may explain the good which follows the employment of mercury and an arylarsonate. On the other hand, there might be an advantage in giving them both alternately. Perhaps there might be an advantage if arsacetin and mercury were employed alternately.

Contra-indication to arylarsonates.—For the present it is at least advisable to proceed cautiously with the employment of arylarsonates and to do so in those cases where no parenchymatous organic changes are observable, as it appears that already diseased or enfeebled organs are more susceptible to their toxic action, hence cases showing signs of cardiac or renal organic disease should not be submitted to treatment by these salts.

How the treatment should be proceeded with.—The question as to how to proceed with the arylarsonate treatment—i.e., as to when a second or third course should be commenced—has naturally been the subject of much thought as it could only be decided by careful observation and clinical experience. The plan in vogue at present at Rochester Row is to repeat the course in three months' time in all cases after the cessation of the first (earlier in cases showing a recurrence of symptoms), and a third course is given in six months' time in all cases, whether showing signs of the disease or not.

The arylarsonate treatment as a prophylactic.—At the meeting of the Medical Congress at Berlin, 1907, Metchnikoff made the statement that by injections of atoxyl he had succeeded in preventing further developments of syphilis in cases of undoubted syphilitic chancre and strongly advocated it as a prophylactic; the number of injections which he succeeded with was three of 10 grains each. His statement was very thoroughly tested in our army—i.e., at certain of the largest military stations every second case of venereal sore of whatever description which was admitted into hospital received four injections of 10 grains of either atoxyl or soamin and a careful record kept. The experiment showed that the injections did not prevent further developments of the disease in any way, so that from a prophylactic point of view their use must be considered a failure.

As a curative measure.—In considering the question as to the value of these arsenical compounds, either from a preventive or curative point of view, I would remark that to judge the efficacy of a syphilitic remedy from its symptomatic relieving action is wholly false, considering the proof which has been furnished by experiments on animals that these salts possess a reliable curative virus-destroying action. It is therefore our duty to utilise this experience gained with animals in the treatment of syphilis, although in the human subject we may at present not be able to produce proof that these arsenical salts are capable of eradicating the disease and can but observe their [illegible] symptoms; still, there being no [illegible] power, we ought to make the most of this possibility. There is no necessity to confine ourselves exclusively to the use of mercury or these arylarsonates, as both will be equally useful in certain cases, either alone or when employed [illegible]

What effect the introduction [illegible] treatment of syphilis will have in the services it is impossible to foretell, but that they are destined to supersede mercury is most unlikely; on the contrary, I believe that their introduction will strengthen more than ever the position of the latter, as by its combination with arylarsonates it will be feasible now to deal successfully with those cases which had hitherto for some reason or another resisted it when administered alone. There is a class of case to which these arsenical compounds ought to be a veritable boon—i.e., those to which it is impossible to give mercury in any form, owing in some cases to an idiosyncrasy, in others to the patient being debilitated and broken down from climate or other tropical influences, and especially to those cases of syphilis which are deeply tainted with malaria. On the whole, I believe that the introduction of the arylarsonates in the treatment of syphilis will have an important influence in the services, as they will undoubtedly tend to lessen the admission rate as also that for invaliding. Our present knowledge of the power of these salts of arsenic over syphilis is only in a very elementary stage, but I look forward to further experience of them and improved technique leading us to that goal in the treatment of syphilis which has already been attained with dourine.

A short letter was read from Major H. C. FRENCH, R.A.M.C., in which he said that the test of benefit in early syphilis was the rapid reduction of induration in the chancre and in the lymphatic glands. He had not found soamin or arsacetin nearly so valuable for that purpose as mercurial inunction with baths.

Major G. S. CRAWFORD, R.A.M.C., communicated a paper on

The Beneficial Results of Recent Sanitary Work in Malta.

He said that if they could prove that by sanitary measures they were able greatly to reduce the number of sick they would secure the active coöperation of all ranks in the army. In Malta they had proved that beyond any shadow of doubt. There were many great advantages in keeping the army healthy. It gave the regimental officers a much better chance of efficiently training their men and fitting them for active service. It was a great saving to the State and it helped recruiting, for the reason that nothing tended more to deter men from joining the army than the state of many invalided soldiers. The paper went on to deal with Malta fever, enteric fever, tuberculous disease, pyrexia of uncertain origin, dysentery, rheumatism, and infantile enteritis.

A discussion followed in which Inspector-General R BENTHAM, R.N., and Colonel HENDLEY took part.

Colonel P. BROOME GILES, A.M.S. (A.M.O, 1st London Division Territorial Force), read a paper entitled

"*On the Importance of the Permanent Attachment of Ample Transport under the Command of the Medical Officer of each Field Medical Unit.*"

He said that the history of war in the past and the experience of peace manœuvres not only proved but emphasised the failure of detailed transport for the use of medical units If the transport was detailed on requisition from the Army Service Corps considerable delay was often inevitable, and even in cases of emergency hours often elapsed before the transport demanded was supplied. Whatever might be said to the contrary, there was no escaping the fact that there was a very possible element of discord in respect to discipline; the detailed *personnel* of one branch of the service could not have the same intuitive feeling of obedience to officers of another branch that they had to their own, and with hired civilian transport there was greater trouble, as civilians were strangers to discipline, generally unpunctual, and accustomed to their regular hours at their own pace. The horses generally were unfit for the work, being untrained and unaccustomed to service environment, and the harness faulty. It was a most elusive thing to think civilian wagons and harness would do for medical units, and he could not imagine anyone with practical experience advocating such procedure. The advantages of permanent transport were that the transport sections recruited for each medical unit were homogeneous, part and parcel of the permanent *personnel*, and practically of the same social rank from which the unit was chiefly recruited. In Territorial medical units hired civilian transport could never be popular or successful. Under the present conditions men had enlisted to the transport sections keen for work, but when they realised that their practical training would be with civilian wagons and harness their enthusiasm would dwindle away. If something was not done he feared the good men would languish and their places would be taken by those who refused the yeomanry, and wanting to wear spurs would join the transport section for that inducement. They should approach the subject from two practical sides—that permanent transport was requisite for each field ambulance, and that to obtain the highest efficiency it must be part of the *personnel*, and its *matériel* must be that of the regular force. The more the Territorial unit coordinated with its Regular branch the higher the efficiency and discipline.

The PRESIDENT pointed out that though permanent transport was to be preferred nevertheless circumstances occurred which demanded the use of civil appliances.

FRIDAY, JULY 30TH.

An interesting paper was communicated by Staff-Surgeon F. F. MAHON, R.N., on his experiences when serving in H.M.S. *Minerva* off Messina, when that town was destroyed by earthquake.

Mr. J. M. CARVELL (London) read a paper on

The Existing Ambulance Organisation of the Home Railway Companies, with Suggestions for its Amplification and Unification.

He said that the course of instruction which railway ambulance men went through was in accordance with the syllabus of the St. John Ambulance Association. It extended over a period of five weeks. There were five lectures with an interval of seven days between each, followed by an examination. The examination consisted of a practical and a theoretical portion. Encouragement to take up ambulance work was given in different ways on different lines, such as rewards for proficiency, rewards for work done, additional passes, medals, certificates of honour, competitions, and prizes. The great incentive to railway ambulance work was the inter-railway shield, which was offered for annual competition by the St. John Ambulance Association. Each railway had the right to send a team of five men to compete As to amplification, he considered that all railway ambulance men should be given an elementary knowledge of nursing and sanitation. The men's wives should also be encouraged to go through elementary instruction in home nursing and sick room cookery. In regard to transport, all guards' vans should be suitably fitted for emergency ambulance work. In his opinion the easiest method of unification would be through the St. John Ambulance Association. All railway companies which had not already done so should form centres of the association and a home railway committee should be formed. The members of the committee should be nominated by the railway companies and by the St. John Ambulance Association.

Captain W. SALISBURY-SHARPE, R.A M.C., T.F., said that the result of prize competitions was too often to develop a few teams of highly skilled men rather than a large number of competent ones, the latter being the result to aim at.

Lieutenant-Colonel E. M WILSON agreed with this remark, but he was of opinion that probably better results would ensue from consultation between those responsible for teaching in the different railways than by asking the authorities concerned to lay down additional rules and regulations.

Colonel HENDLEY considered that it would be best if the railways could consult amongst themselves in the hope that they might arrive at greater uniformity and that the benefits of training might be more widely extended, for he thought with other speakers that improvement was needed, as there was a strong tendency for a few enthusiastic men to acquire skill and for the great body of railway servants to be discouraged and not to keep up their knowledge.

Mr. W. C RIVERS (Newcastle-on-Tyne) read a paper on Rhinology as an Aid to Diagnosis of Pulmonary Tuberculosis, with Special Reference to the Physically Selected Classes. and the work of the section was concluded with the reading of a paper by Staff-Surgeon J. G. WALLIS, R.N., describing a Detailed Scheme for an Unexpected Landing Party using Material Available on Board Ship.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 20th, 1831.

HIS MAJESTY has been graciously pleased to confer the honour of knighthood on Richard Dobson, Esq., chief surgeon of Greenwich Hospital, for his long and distinguished services, with permission also to wear the orders of St. Wladimir, of Russia, and Danebrog of Denmark, which the late emperor Alexander and the King of Denmark transmitted him through their ambassadors, for eminent professional assistance rendered to their respective subjects whilst in the hospital ship at Chatham. From this circumstance we are inclined to believe, that the recent movement in behalf of naval surgeons, has not been without its effect in a certain influential quarter. Hitherto the favours of royalty have been almost exclusively bestowed on surgeons of the army.[1]

HARVEY'S TREATMENT OF GOUT.—Harvey was a great martyr to the gout, and his method of treating himself was singular. He would sit with his legs bare, even if it were frosty weather, on the leads of Cockaine House, where he lived for some time with his brother Eliab, or put them into a pail of water, till he was almost dead with cold, and then he would betake himself to the stove; and so it was done.

Sept. 1st, 1847.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. A. A. H. Hamer has been recognised as *privat-docent* of Odontology.—*Berne:* Dr. Hermann Matti has been recognised as *privat docent* of Surgery.—*Berlin:* Dr. Richard Freund of Halle has been recognised as *privat-docent* of Ophthalmology and Dr. Alfred Leber as *privat-docent* of Midwifery and Gynæcology.—*Bonn:* Dr. Wilhelm Reis, *privat-docent* of Ophthalmology, has been granted the title of Professor.—*Breslau:* Dr. Georg Wetzel, *privat-docent* of Anatomy, Dr. Bruno Heyman, *privat-docent* of Hygiene, and Dr. Paul Schroeder, *privat-docent* of Psychiatry, have been granted the title of Professor. Dr. Georg Lenz has been recognised as *privat docent* of Ophthalmology, Dr. Karl Bruck as *privat-docent* of Dermatology, Dr. Robert Scheller as *privat-docent* of Hygiene, and Dr. Forschbach as *privat-docent* of Medicine.—*Budapest:* Dr. P. von Kubinyi has been recognised as *privat-docent* of Midwifery.—*Christiania:* Dr. Ragnar Vogt has been recognised as *privat-docent* of Psychiatry.—*Greifswald:* Dr Eduard Allard, *privat-docent* of Medicine, has been granted the title of Professor; and Dr Walter Lohlein has been recognised as [illegible] W. [illegible] —*L*[illegible] of Surgery.—*Lemberg:* Dr Eugen Piasecki has been recognised as *privat-docent* of School Hygiene, and Dr. Johann Mazurkiewicz as *privat-docent* of Psychiatry.—*Marburg:* Dr. Alfred Lohmann, *privat-docent* of Medicine, has been granted the title of Professor.—*Prague (German University):* Dr. Eduard Pietrikowski has been appointed Extraordinary Professor of Surgery; Dr. Alexander Margulies, *privat-docent* of Psychiatry, and Dr. Karl Walko, *privat-docent* of Medicine, has been granted the title of Extraordinary Professor; Dr. Friedrich Lippich has been recognised as *privat-docent* of Physiological Chemistry. *Rostock:* Dr. Johannes Remtmol [illegible] *vat docent* of Odontology.—*St.* [illegible] *Academy):* Dr. M. D. Ilin has [illegible] Professor of Medical Chemistry.

THE LANCET.

LONDON: SATURDAY, AUGUST 21, 1909.

The Reorganisation of the International Congresses of Medicine.

WE are informed that some effort may be made at the forthcoming International Medical Congress at Budapest to modify and improve the organisation of future congresses, and presumably the attempt at reform will be directed towards international congresses dealing with the other sciences allied to medicine, such as congresses for the study of preventive medicine or hygiene. The International Association of the Medical Press, which meets at Budapest during the two days preceding the International Medical Congress, will discuss a project prepared by the British section of this association which has considerable interest in this connexion. This is a draft of a constitution to govern the selection of the International Committee, which is the supreme authority over these congresses, to extend the powers of this committee, and also to create a smaller executive committee, meeting at least once a year and employing a permanent international secretary. With a definite supervising authority, an active and experienced executive, and a general secretary well versed in the three languages of English, French, and German, well paid, and devoting his time to the work, it is thought that something like order might be evolved out of the present position, which we only hesitate to call chaos lest we should be misunderstood as belittling the great efforts of past general secretaries. The congresses should be so circumscribed as to become manageable. It is universally recognised that congresses consisting of many thousand members are too unwieldy for practical purposes. They also occasion enormous expense, and as their results do not seem to justify their cost there is a possibility at any time of a projected meeting failing to secure a home and an adequate subsidy. Probably it is not only necessary to reduce the number of members but to exercise more supervision over the communications so as to prevent the reading of commonplace and stale papers which lead to vast waste of time. No one has a more practical knowledge of all the defects of congresses than the members of the medical press who have travelled from town to town, attending congress after congress, and have been compelled on each occasion to obtain an accurate idea of what has been done, so as to record what is the net result of such a multiplicity of effort. Therefore it is only natural that a project of reform should emanate from the International Association of the Medical Press.

Judging from the experience which we have acquired at THE LANCET from the chronicle of many congresses, it may be said that the earlier congresses of hygiene were the best organised of such gatherings that have yet taken place, while these congresses have always been better organised than the medical congresses. This is perhaps as would be anticipated, for the proceedings at congresses of hygiene have a more practical and direct bearing on the legislature of different States. A much larger proportion of the questions to be discussed are fit subjects for, and are ultimately translated into, Acts of Parliament. Many subjects brought forward at medical congresses are at first studied as matters of pure science; they become the base of future laws, but the connexion between the points discussed and the legislative clauses that ensue is neither so frequent nor so direct. A congress of hygiene having definite legal measures as its objective tends to be definite in the scope of its recommendations. Again, in regard to organisation of congresses, it is part of the education of many of the attendants at a congress of hygiene to understand what is meant by organisation. As members of public administrative bodies they know the value of the concrete as against the vague proposal; as engineers or as architects they have to deal at first hand with trade problems which force their views upon the notice of governments. The medical men who naturally attend congresses of hygiene are many of them medical officers of health who have acquired administrative experience and capacity. All this is different with the vast majority of the medical men who attend international medical congresses and whose lives are devoted to the treatment of the sick and the study of medical or surgical therapy. It is excusable that attendants at purely medical congresses should be less able to appreciate the benefits of being organised. But the confusion may become serious when a medical man who is appointed to some important post in the organisation of a congress, not because he is a good organiser but because he holds a prominent position in the medical profession, finds that he has not the necessary qualities for his post. Yet how often a very distinguished physician or surgeon is elected to preside over a general meeting or a section when he has no experience whatsoever of conducting a debate, does not know the form of putting resolutions, amendments, and riders, and fails consequently to control an assembly, whose proceedings accordingly drift into disorder, and whose recommendations are lost to the common stock of wisdom of the congress. By all means let there be as many *Présidents d'Honneur* as may prove agreeable to those concerned, but when there is practical work to be done it should be entrusted to those who are accustomed to that particular sort of work.

When a really important gathering takes place at which many persons are present we inquire immediately what was the upshot of it all, what was done, what was decided. These are questions to which the present manner of procedure affords no chance of ready answer. When a congress consists of three to four thousand members, and that we learn to be the estimated size of the Sixteenth International Medical Congress, and when this crowd is divided up into 20 or more sections, it is not possible to get the members together to decide upon any really debatable question. At the earlier congresses of hygiene at Paris in 1879, at Geneva in 1882, and at The Hague in 1884, there were only a few hundred members. In the mornings there were meetings of sections, at which all sorts of subjects germane to the purposes of the congress were debated. In the afternoons the entire congress assembled; one or two subjects that were thoroughly ripe for discussion were introduced by the best-known authorities present, were intimately explained from different points of view and discussed up and down, and then a vote was taken which, being recorded by the entire congress after an enlightening debate, exercised (and deserved to exercise) great influence on various legislatures. But this did not preclude the presentation to the entire congress of other more purely scientific questions on which no vote was needed or taken. Thus PASTEUR, it may be remembered, reserved for the International Congress of Hygiene that met at Geneva in 1882 his first public communication on the attenuation of the virus of rabies. When his pupil, Dr. ROUX, at Budapest in 1894, had a similar communication to make on the antitoxin for diphtheria this could not be delivered before the whole congress. There were now 3000 members of the congress and no place was available big enough to hold them, therefore Dr. ROUX had to read his paper in the Bacteriological Section, which was overcrowded, while other sections were so deserted that some of them adjourned. With the numerous attendances which spread of scientific education and growth of facilities for travel now bring about it is only possible for all the members of an international congress to meet for the mere formal opening and closing. No debate is possible in such circumstances, and the resolutions that have been carried in the sections are simply confirmed by the entire congress out of politeness and because everyone is on the point of departure and would miss their trains if any discussion was attempted. If there are to be only speeches and lectures it does not matter how many persons attend a congress, but if the recommendations of the congress as a whole are to receive attention the numbers must go down. Article IX. of the regulations of the Sixteenth International Congress of Medicine says that the International Committee will meet on the third day of the Congress to select the town where the ensuing Congress is to be held. This will be a good occasion for discussing how the Seventeenth Congress shall be organised. The committee, say the regulations, will consist of "the presidents and secretaries of the national committees, the president and general secretary of the Sixteenth Congress." They will have a delicate and difficult task before them if they attempt to reform the organisation of the congresses. But this is so much needed that it is to be hoped the committee will not shrink from the task, for the longer the necessary reform is postponed the more embarrassing will the work become.

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The Treatment of Sarcoma by Bacterial Toxins.

A MEETING of the Surgical Section of the Royal Society of Medicine was held on July 13th, for the purpose of hearing an address delivered by Dr. W. B. COLEY on the Treatment of Sarcomatous Growths by the Injection of Toxins Prepared from Bacteria.[1] The matter is certainly of sufficient importance to justify our devoting attention to the process he employs and to the consideration of the results which his treatment has produced. Remedies for cancer have never been lacking. They arise from all parts of the world, and their introduction is generally heralded and accompanied by fulsome eulogiums of the wonderful results which they can produce. Yet, whatever may be the cause, the reputation of every one of them is short-lived. Mr. H. T. BUTLIN, at the debate which followed upon the delivery of Dr. COLEY'S address, said that during his professional life he had seen or heard of very many cures for malignant disease, and he had found that they resembled one another very closely in this respect—that they had all passed through an identical series of stages. At the beginning of the career of each cure the treatment was said to remove with certainty all forms of malignant disease. But a few weeks or months at most disposed of this claim, and then the second stage followed, in which the treatment was put forward, not as a universal cancer cure, but as capable of curing certain forms of malignant growth. Later still the third stage came, in which, though the powerlessness of the treatment to cure completely any form of cancer was given up, it was urged at least that it modified the rate of growth of the cancer and rendered it more amenable to other methods of treatment. But the last stage was never long delayed, and that was oblivion. There is much truth in this witty summary of the career of cancer cures; those which have appeared within the memory of the living have conformed to this pattern, and the records of medicine show that past centuries were equally prolific in cures of transient reputation. All this unhappy experience must go far to dishearten those who are most interested in the cure of malignant disease. So many attempts have been proved to be utter failures that the idea naturally arises, "Shall we ever attain to a cure of this affection?" And we are led to regard with suspicion any drug or treatment which is claimed to cure malignant growths. Such a mental attitude is only natural, for our expectation of the future must rest mainly on our knowledge of the past. But this attitude is wrong, for our knowledge of what has been done by medicine should make us hopeful of what medicine can do. We would not for a moment urge that every method of treating cancer which is put forward should be received at the estimation of its introducer, but we would urge that every method the claims of which are supported by any tangible evidence is certainly deserving of a reasonable trial.

The difficulties of examination of the evidence in favour of a cancer cure are great In the first place, doubt as to the diagnosis is very difficult to overcome. Every growth is not a cancer, though to the unlearned mind it is sufficient for a tumour to be large or painful for it to be regarded as cancerous in nature. But even members of the medical profession may be mistaken in the diagnosis of malignant disease. Time and again it has happened that mistakes have been made on this point, and therefore before we can acknowledge that the growth which has disappeared by any treatment was cancerous in nature we must have more evidence than the mere presence of the symptoms and signs usually accompanying a malignant growth. The most satisfactory of all forms of evidence is histological examination, but here again those who have had the most experience of the histological examination of pathological tissues will be the first to acknowledge the difficulties that sometimes occur in the diagnosis. Especially is it difficult to distinguish between a small round-celled sarcoma and granulation tissue, though similar difficulties occur also in other forms of malignant growth. Many a time a hard mass in the neighbourhood of the pylorus has been diagnosed as cancerous and has been removed, yet when submitted to histological examination it has not been found possible to say with certainty that the mass was carcinomatous in nature. In other cases a similar mass has been exposed by a laparotomy, and the clinical signs were so definite and the mass so fixed that the surgeon considered the growth to be incapable of removal, and therefore he has closed the abdomen; but the subsequent course of the case to recovery has shown that the diagnosis itself was erroneous. It is thus seen how very difficult it is to establish beyond doubt the malignant nature of many growths, but the most satisfactory proof that a growth is malignant is afforded in the case of a recurrence of a growth, when the primary tumour has been shown unequivocably to be malignant by histological examination.

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[1] THE LANCET, July 17th, p. 173.

The basis on which Dr. COLEY has built his theory and practice for the treatment of some forms of malignant disease is probably well known to most of our readers. It has from time to time been recorded that a malignant growth, in some cases carcinomatous, in others sarcomatous, has lasted for a longer or shorter time, and has steadily progressed, so that its course suggested a certain fatal issue before long. Yet an intercurrent attack of erysipelas has been followed by a complete disappearance of the original tumour. Accordingly it has been claimed that the attack of erysipelas caused the growth to disappear. It must be acknowledged that in a large proportion of the cases in which such an occurrence has taken place the diagnosis of malignancy was mainly or entirely clinical and not based upon evidence which would have satisfied the more rigorous criteria of modern medicine. For most of these cases date from more than 30 years ago, when our diagnostic methods were less exact than at the present time. On the other hand, we have to bear in mind that the comparative rarity of erysipelas in hospitals at the present day diminishes greatly the chance of such a disappearance of a malignant growth. Nevertheless, in spite of this objection, we are justified in accepting the records of the clinical facts that malignant growths have been observed occasionally to disappear during an intercurrent attack of erysipelas. This fact impressed Dr. COLEY greatly, and he endeavoured to devise some means by which this sequence of events could be rendered available as a treatment for cancer. His first idea was, of course, to infect cancerous patients with the organism of erysipelas, but in practice several difficulties appeared. In the first place, it is not always easy to give rise to an attack of erysipelas, and in the second it is not possible to limit the virulence of the attack when it has once been started. Dr. COLEY therefore determined to employ the toxins instead of the living streptococcus. It has been shown, both clinically and in the laboratories, that the bacillus prodigiosus has in itself a curative effect upon tumours, and, moreover, that it intensifies the virulence of the toxins of erysipelas. Therefore, Dr. COLEY now employs a mixture of the toxins of these two micro-organisms. If we allow the correctness of the diagnosis of malignancy in the tumours treated, what results can Dr. COLEY show? Up to the present he has employed the treatment in nearly 500 cases, and of these only three died as a result of the treatment, though deaths have been recorded where the method has been employed by others. Of these 500 cases success seems to have followed the treatment in rather more than 50 cases, so that we may say that some 10 per cent. of the cases treated have had a successful result. The experience of Dr. COLEY shows that the failure which has resulted in the hands of many may be due to several causes. In the first place, it is fairly well established that it is only in sarcoma that satisfactory results have been obtained, for these toxins appear to be entirely useless against carcinomata. In the second place, many of the preparations of Coley's fluid which have been placed upon the market have not been made with the care and exactness which are employed in the preparation of the fluid used by Dr. COLEY himself. In the third place, the records of Dr. COLEY'S cases show that much perseverance and many injections are sometimes required to produce any evidence of improvement. Occasionally it has been owing to the wish of the patient himself that the treatment has been carried on until success has been attained. Fourthly, in many cases severe symptoms appear. Rigors, cyanosis, frequent and feeble action of the heart, with a temperature which may reach 105° F., will certainly tend to discourage all but the most enthusiastic believers in the efficacy of the fluid The reports of some of the cases successfully treated by Dr COLEY are very striking. In many of them several years have elapsed since the recovery, so that Dr. COLEY is justified in claiming that the result is permanent.

What, then, shall be said as to the value of the treatment? We feel that at present the attitude of the profession in this country should be strictly non-committal. We do not deny the records which have been presented to us. We willingly acknowledge the good faith, the energy, and the perseverance under difficulties which Dr. COLEY has shown in his elaboration of this method of treatment, and we consider that it deserves a thorough and careful trial at the hands of the profession of this country. It is no new method Some 16 years have elapsed since it was first brought forward by its originator, and during that time he has improved it until in his hands it appears to have reached some degree of exactness; and it is essential, if it is to receive a fair trial here, that the methods employed by Dr. COLEY should be adopted with the utmost exactitude. At the meeting of the Royal Society of Medicine it was urged that the method was unsatisfactory because we did not understand how it worked. This is an argument worthy of all respect from scientific men, but for practical purposes it cannot always be respected. If we are to be debarred from the use of a treatment because its *modus operandi* is unknown, of how many drugs in the pharmacopœia should we be deprived? The use of potassium iodide in tertiary syphilis and of colchicum in gout is absolutely emp[illegible] yet we are fully justified in employing these. And so it may well be with Dr. COLEY's toxins. We hope that the use of Coley's fluid will be carefully and thoroughly tested here, and we echo the wish of Mr. BUTLIN that Dr. COLEY could stay in this country for at least a year in order to show us how the method is employed, and how to attain the results which he himself has achieved.

The First Report of the Departmental Committee on Coroners.

THE Blue Book, recently issued, which contains the evidence given before the Departmental Committee appointed to consider the law relating to coroners and coroners' inquests and the practice in coroners' courts, contains much that is of interest to the medical profession. Before very long, presumably, the recommendations of the Committee will be issued, when it may be hoped that the course of politics will permit legislation to follow at no great interval. The law requires amendment, as all are aware who, as coroners, as medical practitioners, or in other capacities, have been brought into contact with cases of death where no medical certificate has been forthcoming, while the cause of death has had to be established in the interest of the public or of surviving relatives. At the intermediate stage which then ensues, and which precedes in some instances an inquest and in others burial without either a medical certificate or a public inquiry, the machinery has often failed to work smoothly, and the Committee has consequently had to concern itself largely with the possible amendment of the procedure at this point. The shortcomings have now been explained to a body competent to make suggestions of a practical character, and one result of the inquiry has been that the coroner's office and the inquest, including the coroner's jury, have received worthy vindication of their ancient dignity and usefulness from witnesses whose words are in every way entitled to carry weight. Their opinion may be summarised by saying that especially in cases where there is a suggestion of murder, manslaughter, or conduct deserving censure, it is of great importance that there should be an inquiry at which evidence on oath can be compelled, although no charge has been formulated against an individual, and at which statements can be admitted which would be excluded if such a person were being tried in accordance with the rigid laws of criminal evidence. The use of such statements, which might be kept back from those conducting an inquiry privately, is, of course, not to prejudice the guilty but to ascertain the truth as nearly as possible, to afford clues, and to suggest directions in which admissible evidence may be sought. With regard to the British jury, it has been spoken of by advocates in terms of turgid laudation as a "palladium" of our liberties, and it has been made, on the other hand, the object of censure and of ridicule not always undeserved. It may be admitted, moreover, that in coroners' courts not situated in such an exceptional area as the City of London the juries are hardly composed of the best educated and most intelligent of the community. Nevertheless, whether it be summoned to assist the coroner or any other judicial officer, the jury remains [illegible] fact," the most satisfactory tribunal that we are likely to obtain, in spite of the circumstance that its duties may involve the consideration of scientific testimony. There is, apparently, no desire on the part of lawyers, medical experts, or coroners who have given their evidence before the Departmental Committee to transfer the responsibilities of the men in the "box" to the coroner, either alone or in conjunction with a medical assessor. It is true that Professor H. H. LITTLEJOHN, with a combined experience of the English and Scotch systems, expressed an opinion in favour of the latter, and advocated an inquiry conducted privately by a trained legal official. His evidence was of a valuable character and will no doubt afford suggestions for improvement in matters of detail; but, on the other hand, Mr. A. J. PEPPER may be cited as a witness of weight who maintained his belief in the jury system, and other witnesses, including coroners, whose duty it has been to apply the existing machinery, took a similar view. Making allowance for the tendency which we must all have to trust to methods with which we are familiar, we do not think it likely that in this country the coroner's jury will be superseded by any other tribunal in the near future, although steps may be taken to render the enquiries more satisfactory to all concerned.

The method of summoning juries and the number of jurors desirable for practical purposes are discussed in the report, and other topics ventilated which are of special interest to the medical profession include the viewing of the body by the coroner and the jury. It is a little surprising to find a strongly voiced opinion in favour of retaining the practice under which a jury is compelled to inspect the body. Under present conditions, at all events where apparatus necessary for it exists, this is done without risk in possibly infectious cases and without any exposure of a distressing character. The reasons given for retaining the view, however, included the possibility of a juror making a valuable suggestion from the inspection (for which obviously something more than a glimpse of the uncovered face would be necessary), and also the danger of some deception, such as the substitution of another body, being practised. Mr. G. P. WYATT, a coroner of experience, was also of opinion that the necessity of inspection of the body by the jury afforded the coroner a tangible pretext for insisting on his right to have possession of the body without demur on the part of the relatives. The possibility of the coroner being given a discretionary power to order a view by the jury and of individual jurors being allowed to decline to avail themselves of the opportunity was considered, and this seems to us a fair compromise. Two important questions arose for the Committee out of the post-mortem examination—the first being whether the coroner should be empowered to order this before deciding to hold an inquest; and the second to whom he should intrust any post-mortem examination that he might consider desirable. Mr. R. HENSLOWE WELLINGTON may be mentioned as an advocate of the preliminary post-mortem examination. He put the number of inquests which might be dispensed with if the cause of death were to be thus ascertained at 40 per cent., and as it is admitted that an inquest often causes distress to the friends of the deceased, as well as public expense, it seems likely that the authority to make the order suggested will form the subject of a recommendation by the Committee. The question of who is to hold the post-mortem examination follows, and the opinions expressed were divided between the employment of an independent pathologist in all cases, and the alternative of his services being made use of at the coroner's discretion. The friction which has arisen in the jurisdiction of a London coroner owing to his practice in this matter will be remembered, and it will be interesting to see what the Committee will recommend. On the one hand, it is clear that the medical man who under the provisions of the Coroner's Act, 1887, now has the right to be ordered to make the post-mortem examination is perfectly competent to do so in a large number of instances, but in some others it would be better to employ a pathologist qualified by special training and practice for the purpose. If, however, the employment of the latter is not rendered obligatory a question necessarily follows as to how the coroner, particularly if he is not himself a medical man, is to exercise the discretion suggested. In this connexion it may be mentioned that several witnesses were asked as to the qualifications desirable for the holding of the coroner's office, and that Mr. HENSLOWE WELLINGTON was of the opinion that in country districts the legal qualification might be preferable to the medical, but that in large urban areas the coroner should be a "medically qualified lawyer with experience." These topics are likely, however, to be reviewed as a whole, the comparison of the English and Scotch systems, with the selection of desirable features from both, affording the most obvious method for obtaining that efficiency which we all desire to see—an efficiency which, be it remembered, must always fall short of perfection and, however generally satisfactory, can scarcely be expected to be beyond criticism.

The principal topics dealt with by the witnesses before the Committee, including those mentioned above, were propounded to them in a series of written questions addressed to them before they gave evidence, and a number of other points arising out of these were discussed. The fees of witnesses suggested dealing with those fees which should be paid but which are now unjustly withheld, when the deceased has died in a hospital and when the medical witness is a member of the staff of the institution. The Committee was reminded in an interesting piece of evidence by Mr. ISAAC BRADLEY, coroner for Birmingham, that this proviso is the survival of a clause to the same effect introduced into the Coroners' Act passed at the instance of Mr. THOMAS WAKLEY, the Founder of THE LANCET, early in the last century. It was then devised as a reservation in the nature of a compromise in order to induce Parliament to sanction the payment of any fees to medical witnesses, and its retention has been a matter of adverse comment ever since. Inseparably connected with the question of fees to medical witnesses properly so called is that of remuneration for medical men from whom coroners seek information when a death is first reported to them. We are not sure whether the Committee had this matter fully enough before it, and whether the evidence of one or two members of the medical profession conversant with the matter from recent personal experience might not be found useful. There are, however, more witnesses to be called, and the revision of the system of inquiry preliminary to holding an inquest or to dispensing with one must necessarily bring the subject under consideration. With regard to the scale on which medical fees should be fixed, as well as on other important subjects, the Committee had evidence from Dr. A. G. BATEMAN in his capacity of general secretary of the Medical Defence Union. His evidence, and that of several other witnesses, including Mr. CLINTON T. DENT, Dr. F. J. WALDO, and Mr. J. BROOKE LITTLE, a barrister, who gave an instructive historical synopsis of the history of the coroner's office, should interest medical men into whose hands the Blue-book containing it may fall.

We have not here gone into the evidence upon two subjects of rather disproportionate importance to which the Home Office called the Committee's attention after its appointment. These are deaths resulting from the administration of anæsthetics and the danger arising from the use of flannelette in articles of clothing. As to the latter, little was said of importance, attention being called to the provision for use of fireguards in the recent Children Act. As to the former, exhaustive and interesting evidence was given by an important series of witnesses, which will probably have as its outcome a recommendation as to the manner in which these deaths should be inquired into. This is, however, a matter which does not affect the general ordering of those duties which a long process of development has assigned to coroners.

Annotations.

"Ne quid nimis."

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE British Association for the Advancement of Science will this year hold its annual meeting at Winnipeg, in Western Canada, and a considerable number of passengers left British ports by steamer a week ago for the purpose of taking part in the proceedings. On the present occasion the association is making its third visit to Canada. At the first visit, in 1884, the meeting was held in Montreal, Lord Rayleigh being the President, while at the next visit, in 1897, the meeting was held in Toronto, with Sir John Evans as President. The proceedings will commence at Winnipeg on August 25th, Sir Joseph J. Thomson, Cavendish professor of experimental physics in the University of Cambridge, being the President. The work will be conducted in 11 sections, the subjects and sectional presidents of which will be as follows:—Mathematical and physical science (Professor Ernest Rutherford), chemistry (Professor H. E. Armstrong), geology (Mr. H. Smith Woodward), zoology (Mr. A. E. Shipley), geography (Colonel Sir Duncan Johnston), economic science and statistics (Professor S. J. Chapman), engineering (Sir William H. White), anthropology (Professor J. L. Myres), physiology (Professor E. H. Starling), botany (Lieutenant-Colonel D. Prain), with a sub-section on agriculture (Major P. G. Craigie), and educational science (Rev. Dr. H. B. Gray). Medical subjects treated from a clinical or therapeutic point of view are seldom, if ever introduced, but numerous questions of great medical interest have been from time to time discussed and it is understood that several papers of this kind will be read at the meeting. It may be almost taken for granted that Sir Joseph Thomson's presidential address will deal either with recondite questions of chemical physics or with the electrical theory of matter.

SYPHILIS BEFORE THE CONQUEST OF PERU.

THE question of the site of the earliest appearance of syphilis in the world has often been debated and will probably never be satisfactorily settled, the unenviable distinction having been variously claimed for Asia, Europe, and America.[1] A good deal has been written to prove that the Spaniards introduced the disease into Central and South America; and, on the other hand, certain authorities have believed themselves justified in claiming that Europe was free from it until it was introduced by the Spaniards on their return from the New World, through whom the Army of Charles VIII. of France, which invaded Naples in 1494–95, was infected, this being the first well recognised epidemic of the disease of which we have clear historical accounts. Though it is now pretty well ascertained that syphilis existed in Europe long previously to the return of Columbus, it is still very possible that his soldiers did bring back a virulent form of the disease. From the writings of the early Spanish missionaries and others it would appear that the disease called huanthi in the Peruvian Indian dialects was no new phenomenon, but had been well known among these peoples long before the conquest, and it is generally agreed amongst the medical men who have studied the question on the spot that this word is practically the native name for syphilis. It was recognised by the early missionaries that the lives of the Indians were exceedingly immoral, and that huanthi was spread in consequence of their licentious practices. It was even alleged that the disease was natural to certain animals, especially the alpaca, and that Indian herdsmen contracted it from them; but according to the most recent authorities it would appear that though the alpaca disease attacks the anus and genital organs and is highly contagious amongst these animals it is not communicable to human beings and is certainly not identical with syphilis. Its existence is, however, looked upon with special disgust by many merchants, so much so that they avoid all traffic in these animals and their skins, even though the trade is a lucrative one. A good deal of controversy has raged round the question of the nature of the terrible epidemic occurring in the neighbourhood of Quito which caused the death of the great Inca Huana Cápac. Cieza de Léon, writing about 1548, says that it was a pestilence of such terrible virulence that more than 200,000 persons perished. He describes it as small-pox, as also does Pedro Pizarro, writing in 1571. The Indian historian, Don Juan de Santa-Cruz, speaks of it as measles, and Pedro Sarmiento Gamboa as "a kind of fever (*enfermedad de calenturas*), which is thought by some to have been small-pox and by others measles." More recent writers have variously suggested malaria, leprosy, typhus, Peruvian verruga, and syphilis as being the true nature of this remarkable epidemic. The reasons adduced for some of these guesses—for they can hardly be much more—are not very convincing. With regard to syphilis, though that disease may not have caused the death of the great Inca, proofs are not wanting that it existed in the New World long before the arrival of the Spaniards. Very recently a young Peruvian medical man, Dr. Julio C. Tello, has published as a graduation thesis an account of a large number of human skulls which he has occupied his vacations in collecting from the tombs in the district of Huarochiri in the province of Yauyos, thus adding to the knowledge of these interesting memorials of an age long antecedent to the conquest obtained by Davila Briceño,[2] McGee,[3] Dr. Albert S. Ashmead[4] of New York, and Dr. Robert L. Nitsche.[5] Many of the skulls found by Dr. Tello presented exostoses, sometimes single sometimes multiple, of the frontal or parietal bones. In other instances there were perforations or loss of substance which may in some cases have been due to rude attempts at trephining. Dr. Tello thinks that though doubtless blows and wounds of the head were frequent enough amongst the old Peruvians many of the lesions presented by the skulls in his collection were due to a combined effect of the specific disease and the traumatism. This immense collection of pre-historic remains, which has been given to the University Museum in Lima, has already been an object of great interest, pathological and antiquarian, and the energetic young investigator has found no lack of professors and other medical men who are in agreement with him as to the probable syphilitic nature of many of the pathological conditions presented in the specimens.

"FOR PROFESSIONAL SERVICES RENDERED."

AN anonymous correspondent, recently writing to the *Stage*, called the attention of "The" Profession to which he belongs to a grievance which he alleges is felt by many medical men towards certain of his brethren. He premises that "a large number of the foremost members of the medical profession as well as many general practitioners, have been kind enough to give their time and services to the members of the Actors' Association," and discusses the obligation which rests upon the beneficiaries of this concession to render something in return. He goes so far as to state that "the original undertaking was that these honorary physicians and surgeons should receive, as a sort of *quid pro quo*, in no way commensurate with their services, the courtesy of free admission to the theatres in London and the provinces." His point is that this unwritten contract has not been fulfilled by his profession, and that "complaints are constantly being made by doctors in consequence." He asks that a definite policy may be made clear as to whether the medical men in question are to be accorded this honorarium in future or not, and in the latter case he prophesies that "it is natural and reasonable to anticipate the eventual collapse of a hitherto inestimable benefit available to members of the Actors' Association." The communication, coming apparently from an actor, is worth consideration, and in discussing it we do not wish to narrow the principle involved to the application of any particular case, but rather to inquire whether medical men who voluntarily give their services with their eyes fully open to the gratuitous nature of the arrangement have a legitimate grievance if they get no more substantial return than the blessing which rests on the giver. We are inclined to think that they have no grievance, and for this reason. If they agree to treat people without fee, the inference is that those particular people are for some cause unable to pay a fee at all commensurate with the nature of the services rendered to persons of their own station in life. Now every busy medical practitioner comes across a large number of cases to which this description unfortunately applies, notably amongst the professional and "retired" classes, whose antecedents and appearances prevent them from applying for hospital relief, even if their pride would allow of it, but who can only just make both ends meet in the ordinary course, or perhaps cannot even do that, and who are absolutely unable to bear the financial strain of a time of sickness without the generous assistance which they often receive from their medical attendants. The reason of this generosity is, of course, that the traditions of medicine are those not of a trade but of a liberal and humane profession, and although we know full well that there are a number of comparatively well-to-do people constantly seeking the services of medical men who are ready to exploit this professional tradition in the shabbiest manner, yet we should be very sorry to think that their selfish greed should ever suck the well-springs of medical compassion so dry that they should cease to flow for those in true need of them. But if it is sometimes the privilege of the medical man to give freely of his best, it is no less his duty to withhold gratuitous attendance from those who are properly able to pay for it, and the only general rule which he can follow safely is to decide every case on its own merits. We will put aside as a special case the mutual gratuitous attendance that is customary amongst medical men and is generally extended to their immediate families, only remarking that the extension in question is sometimes stretched beyond its fair limits, and we will not discuss at present the enormous amount of free medical work that is done every day amongst the working-classes and the poor, for this falls under a somewhat different consideration from the case of the professional classes Amongst these there are two which have been favoured with so much gratuitous medical attendance in the past that we understand that not a few of their members have come to regard the free services of a medical man almost as one of the prerogatives of their calling, or who would at least be unpleasantly surprised to receive a normal account from their medical attendant. In thus alluding to the Church and the Stage we do not wish it for a moment thought that we deplore the custom which has led our own profession to offer generous treatment to the poorer actors and actresses, and especially to ministers of religion. The miserable stipend of the hard-worked curate with a family is only more notorious than the financial disabilities of the actor who has not "arrived," and the very genuine gratitude of many a poor clergyman or player to his medical benefactor—who has himself, perhaps, found the struggle for existence none too easy—must often have gone far to reward the compassionate practitioner for doing what he could for a fellow creature in distress. It may well happen that if the grateful patient attains to an unexpected success he will make it his business to requite the man who helped him in some tangible manner; but the essence of an act of fine charity seems to us to be tainted if it be bestowed by the medical man with the proviso—implicit or explicit—that he should receive payment in kind. If he wants to make a charge let him make one, or refuse to treat the case, as he may quite properly do, but by all means let him avoid the impossible attitude of doing a man a good turn "for nothing," and then feeling aggrieved because he has got nothing for doing it. To return to our original instance. Whether the definite arrangement exists between the Actors' Association and its honorary medical officers which the *Stage's* correspondent describes, we have considerable doubts. If it does we can only wonder at the influence which that association commands in being able to pledge the credit of the proprietors and managers of the theatres throughout the country to supply free seats to medical men who ask for them. We certainly are not aware that medical men are in the habit of applying for free seats. At the same time we are quite sure that the more prosperous members of the dramatic profession who can afford to pay their lawyers and their tradesmen to the full would not seek to evade the payment of their medical attendants, who would be very ill-advised not to send in their professional accounts to any patient who can obviously afford to pay it, whatever be his calling. Whilst free medical work may be sometimes properly done for hardworking or retired professional men with an income disproportionate to their legitimate needs—and especially to actors or clergymen, who are conspicuously ready to give their services to help other people—no return should be looked for in consideration of what is simply an act of mercy. We can see no reason why a rector with a comfortable living, and perhaps private means as well, or a prominent actor earning his £10 or £15 a week should not pay for medical attendance exactly the same fees as would be expected from a soldier, an architect, or a lawyer enjoying the same income and subject to the same kind of expenses.

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[1] See reference to Dr. Kronfeld's paper in THE LANCET of July 31st, 1909, p. 333.

[illegible], of the [illegible] om the [illegible] Iummy- [illegible] 'ogy, the [illegible] vols. ix. and xi.

THE DOSAGE OF DRUGS IN RELATION TO BODY WEIGHT AND SURFACE.

IN the *Bio-chemical Journal* for July Professor Benjamin Moore, professor of bio-chemistry in the University of Liverpool, argues on the fallacy of stating the dose of a drug in relation to the body weight of the subject of treatment. He considers that, quite apart from idiosyncrasies and alteration in the species of animal, this method of stating dosage is based on a wrong principle. Many drugs, even in the same species of animal, act upon two individuals of different size proportionately to their body surfaces, or, in other words, proportionately to the two-thirds powers of their weights. For example, the dose of many drugs that can be given to infants to produce a given therapeutic result is often many times larger than the proportionate dose for an adult on the basis of the body weight. Apart from a few cases of idiosyncrasy, as with morphine, it is usually found that the balance is in the opposite direction. Thus, an adult weighing 150 pounds cannot be given 15 times the dose for an infant weighing 10 pounds, but more nearly a dose of six times as much, which is the two-thirds power of the ratio in the two weights. Professor Moore further claims that there is a limit to our power of applying therapeutic agents against disease in larger animals, and that a cure may be effected with ease in smaller animals, but not in large animals or in man, simply because of their greater size, and not because of any peculiar sensitiveness to the drug. In support of these contentions he cites the case of atoxyl, a drug which easily cures trypanosomiasis in small animals, such as the mouse. The difficulty of effecting a cure, however, increases with rabbits, while with men and the larger animals the difficulty is enormously greater, as the trypanosomes can scarcely be driven out from the circulation by such sub-lethal doses as it is possible to give. Bearing these facts in mind, Professor Moore sought to find a physico chemical basis which might afford an explanation. A study of the action of arsenic, antimony, atoxyl, and the soluble salts of bismuth, iron, and other metals led him to the following conclusions: 1. In the case of substances which act by stimulation or inflammation of surfaces, such as the intestinal tract, the maximum dose is proportional not to the body weight but to the two-thirds power of the body weight. 2. This leads to important differences in dosage in man and large animals. 3. It also shows that the possibilities of treatment are diminished by natural means in man and large animals, which have naturally less intestinal and other surfaces per unit of weight Accordingly they can only take up proportionately less drug, and if any remedial substance is manufactured by the surface cells they can only manufacture relatively less than the smaller animal. 4. In general terms it may be said that the uptake and output of poison or infection are relatively more rapid in the child, and in small animals, which are on this account more susceptible to the onset of infection, and at the same time have more power of recuperation when infected. Professor Moore suggests that for the great majority of drugs the method of stating dosage as so much per kilogramme should be abandoned. It is preferable to determine the dose for an animal of an observed weight by taking the two-thirds powers of the two weights and calculating the dose for an animal weighing one kilogramme, stating the dose as for a one kilogramme animal and not as per kilogramme of body weight. From this dose the dose for a man of average weight, say 64 kilogrammes, can readily be deduced. It is the dose for the one kilogramme animal, not multiplied by 64, but by the two-thirds power of 64, which is 16. Hence it is obvious that the usual method of calculating the dose gives a result *four times too high*. This new formula is interesting and perhaps accounts for the fact that in human therapeutics the dose for light and heavy persons does not rise and fall in proportion to their weight. The heavier person requires a slightly higher dose, but not proportionately to his greater weight.

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS: THE OFFICIAL USE OF THE ITALIAN LANGUAGE.

THE general secretary of the approaching International Medical Congress, which will open at Budapest on August 29th, informs us that 3000 members have already expressed their intention of attending and that a further 1000 may be expected. Up to August 11th the list of medical men from different countries who have subscribed to the membership is made up as follows: Argentine Republic, 35; Austria, 188; Belgium, 43; Bosnia-Herzegovina, 7; Brazil, 22; Bulgaria, 17; Chili, 4; Cuba, 6; Denmark, 8; Egypt, 21; France, 257; Germany, 218; Great Britain and colonies, 92; Greece, 16; Holland, 31; Hungary, 855; Italy, 145; Japan, 24; Mexico, 3; Monaco, 1; Norway 2; Portugal, 28; Roumania, 10; Russia, 172; Servia, 4; Spain, 64; Sweden, 4; Switzerland, 23; Turkey, 17; United States, 164; and Uruguay, 2. 656 ladies intend to accompany these congressists. The programme of fêtes and receptions will appear in the first number of the official journal of the Congress, which will be distributed to members of the assembly on August 28th. Besides the "soirée of welcome" the programme will include a reception at the Royal Hungarian Court and evening entertainments given by the President of the Congress, the municipality of Budapest, the Presidents of the 21 sections, and the Ladies' Committee. It may be well to clear up some misconception concerning one of the official languages to be used at the Congress. For some time past the Italian journals, professional and lay, have been under the impression that their country's language would be excluded from the proceedings of the Congress and that Italy's representatives would be able to intervene in the discussions only in German, English, or French. How that impression can have been formed it is hard to say, but that it undoubtedly existed has been but too evident from the spirit—not quite "fraternal!"—in which Italy has been discounting in advance the importance of the Congress and the value of its contributions to the cause of medicine, scientific and clinical. Something of the resentment with which Italians have been contemplating the attitude of Austria—not Hungary—towards her academic claims at Innsbruck and Trieste, nay, in Vienna itself, may have coloured the comments above referred to, and at one time it appeared quite possible that not only the Italian language but the Italian delegates would [illegible] pation [illegible] by the correspondence now made public between Professor Temesvary, representing the University of Budapest, and Professor Luigi Maria Bossi, representing that of Genoa. "The Italian language," writes the former gentleman, "will be equally recognised at the Congress with our own. The Italian 'reports' are already printed and distributed in the Italian language. We Hungarians love and esteem our Italian colleagues because on the battlefield of science our cause, our ideals, and our enemies are the same. We cordially await the arrival of our Italian brethren." It should be remembered that Article 16 of the constitution of the Sixteenth International Medical Congress stipulates that "the Italian language is recognised in the discussions of the Congress as on absolutely the same footing with the French, the English, and the German." The organising committee of the next Congress has thus taken full account of the claims of Italy—claims, it may be added, which have been ignored in recent congresses. We are informed that His Excellency Signor Rava, Minister of Public Instruction in the Italian Government, has received by telegraph from Budapest a confirmation of the admission of his country's language to equal rights with its three sisters at the coming Congress. So "all's well that ends well."

PLAYING WITH SAND.

THE amusement which children find in making "castles" with sand on the seashore, in digging trenches and pits, and tracing designs on the alluring surface is innocent enough and serves to keep the youngsters occupied and to give them exercise in the healthy environment of sun and fresh sea air. A somewhat similar end is gained by providing sand heaps inland, in public parks, and in various open spaces, and as a matter of fact such heaps of sand are a source of joy to many children. It would be a pity to kill such joy, for the lot of the poor city child is, as a rule, a poor one, but we would suggest that some attention be paid to a certain insanitary aspect of these inland sand games. It must be remembered that the sand of the seashore is continuously washed by an advancing and receding sea, and so is made clean every tide. But that is not the case with the sand heap at home, which, after the play of a few weeks, becomes very dusty, and this dust during the play is scattered in all directions, and no doubt a good deal of it is swallowed and some inhaled. Infection may follow, for no one could be bold enough to say that the sand after days of use would be free from infective material. It would be a great gain if the sand could always be kept damp and free from dust, but it would be better still if damping could be associated with the application of an inoffensive antiseptic.

THE USE OF CASIMIROA EDULIS AS A HYPNOTIC.

IN *L'Union Pharmaceutique* for July M. Albert Robin and M. A. Coyon call attention to the value of the fruits of *Casimiroa edulis* as a hypnotic. It is a Mexican plant, of the natural order Rutaceæ, and has been employed with success in South America for many years as an analgesic, sedative, and hypnotic. M. Robin and his colleague obtained a supply of the drug, and after a trial extending over two years they speak in terms of praise of its hypnotic and antispasmodic action. They used it in the form of a fluid extract, in doses of one to two teaspoonfuls, and observed that its administration was followed in two or three hours by a calm sleep, free from nightmare, and resembling natural sleep. The effect lasted about five or six hours and the patients on awaking did not suffer from headache, fatigue, or nausea. On account of its harmlessness in these doses they recommend the use of the drug in renal and nervous affections, particularly in old people. It is not advisable to give higher doses than two teaspoonfuls, as the drug produces toxic effects in large doses. According to some Mexican writers it exerts a paralysing effect on the respiration, although M. Robin and M. Coyon were unable to confirm this statement. They noticed, however, a paralysing action on the cardiac muscle, which would contraindicate its use in cases where the myocardium is injured. In the *Press Médicale* of June 30th M. Chevalier suggests that casimiroa has a selective action on the brain, rapidly causing a depression of the intellectual and sensory functions, and therefore deadening the sensation of pain. Large doses produce almost complete anæsthesia, which persists while the grave symptoms of intoxication remain. The drug lowers the temperature, arrests the respiratory movements, and diminishes the number and the energy of the cardiac movements. It also lessens the blood tension and produces marked peripheral vaso-dilatation.

DANGEROUS HAIR-WASHES.

No one who read Dr. Augustus D. Waller's communication to THE LANCET of August 7th, p. 369, in which he demonstrated the very toxic nature of carbon tetrachloride, can doubt that such a readily vaporised and poisonous substance ought not to be employed in any toilet operation. Dr. Waller examined the contents of a hair-wash consisting largely of this substance, though mixed with carbon bisulphide, another poisonous gas, by means of unimpeachable physiological tests such as he has proved of great service in the estimation of the relative toxicity of anæsthetic substances. Dr. V. H. Veley amplified these results by a chemical analysis, and the verdict against the hair-wash was final. If further proof be required it is afforded by a letter from Dr. J. E. Sandilands, which we print on another page. The question asked last week by Sir William Collins of the Home Secretary in the House of Commons, and recorded by our Parliamentary reporter, was the natural sequel of these investigations. Mr. Gladstone's reply to a catechism concerning the recent death of a lady from the effects of the hair-wash, the danger of that substance, and Mr. Gladstone's intentions as to stopping its sale, was written as follows:—

> My attention has been called to the use of tetrachloride of carbon as a hair-wash, to the very great danger involved, and to the death referred to by my honourable friend. I am informed by the Privy Council that tetrachloride of carbon is not a poison within the meaning of the Pharmacy Acts, and there are, therefore, no restrictions as to its sale. As regards the steps to be taken in the matter, I can only say that the Director of Public Prosecutions has the question of a prosecution now under his consideration.

We presume that Mr. Gladstone was using his best endeavours in the public safety and can only regret that he is not empowered to do more to enforce it, for if there ever was a case for the issue of an administrative order we should have thought this to be one. There is something sadly lacking in the machinery of Government if, when it has been found that a powerful poison is being commercially used in a manner dangerous to human life, the Government, though well aware of its nature, has no power to stop its sale because it is not a poison "within the meaning of" an Act. It is conceivable that an extension of this principle to other unscheduled poisonous substances might lead to even worse disaster. In the meantime we are informed that the use of the poisonous hair-wash has not been discontinued, and even though the Public Prosecutor intervenes in any particular case, the resulting verdict will apply to that case alone. In the meantime we would point out that under Section 2 of the Poisons and Pharmacy Act of 1868 which was not repealed by the Amending Act of last year, the Privy Council has power to declare carbon tetrachloride to be a poison "within the meaning of the Act," on the recommendation of the Council of the Pharmaceutical Society of Great Britain. We trust such a recommendation will be forthcoming.

MENINGITIS DUE TO THE TYPHOID BACILLUS IN ENTERIC FEVER.

AT a meeting of the Société Médicale des Hôpitaux of Paris on July 16th M. Claret and M. Lyon-Caen reported a case of enteric fever with the rare complication of meningitis due to the typhoid bacillus. A woman, aged 23 years, was admitted into hospital with the general and abdominal symptoms of enteric fever on April 20th. She had suffered from headache and fever for 10 days and was very prostrate. She was found to have a furred tongue, dry at the tip and edges, gurgling in the right iliac region, palpable spleen, bronchitis, and constipation. The temperature ranged from 103·3° F. in the morning to 104° in the evening. Rose spots subsequently appeared and the serum reaction was positive in a dilution of 1 in 100. On May 1st the patient complained of violent headache, and there was ptosis of the left upper lid. On the 3rd the signs of meningitis were complete—rigidity of the neck, Kernig's sign, inequality of the pupils, an irregular pulse of 110, and vomiting. Lumbar puncture showed no increased intra-meningeal tension and yielded 15 cubic centimetres of clear albuminous fluid. The fluid was centrifugalised and the deposit showed 60 per cent. of polynuclears, 25 per cent. of mononuclears (lymphocytes and large mononuclears), and 15 per cent. of red corpuscles. No bacilli were seen. On May 4th the rigidity of the neck was a little less, lumbar puncture was again performed, and the typhoid bacillus was cultivated from the deposit in a state of purity. The patient was treated with cold baths, and except for an intestinal hæmorrhage two days later her condition remained the same until May 8th, when she was weaker and had violent nocturnal delirium and incontinence of urine. On this day lumbar puncture yielded clear fluid containing lymphocytes and some red corpuscles; the typhoid bacillus could not be cultivated from the fluid, which agglutinated a young culture of the typhoid bacillus in a dilution of 1 in 20, while the blood serum agglutinated it in a dilution of 1 in 100. Recovery gradually took place. M. Claret and M. Lyon-Caen were able to find only 12 recorded cases in which during life the typhoid bacillus was found in the cerebro-spinal fluid by direct examination (four cases) or cultivated from it (eight cases) in meningitis in enteric fever. In only two cases was the fluid described as purulent; in one it was described as opalescent, in three as slightly hæmorrhagic, and in seven (including the above case) as clear and limpid. Only one writer, Nieter, investigated the agglutinative power of the cerebro-spinal fluid. The researches of Concetti, Widal, and Sicard show that in ordinary enteric fever this power is almost always absent, however intense be that of the blood serum. In the above case, as has been shown, it was feeble. It is interesting to compare this weak agglutinating power of the cerebro-spinal fluid with its bactericidal power, which, according to Concetti, is constant. Another interesting point is the duration of the infection of the cerebro-spinal fluid. In two cases the bacillus was found after two punctures made at an interval of eight days, but was absent when a third was made eight days later. In another case the first puncture, made when prostration was the only sign of meningitis, yielded clear and sterile fluid; a fortnight later the fluid was purulent and contained the bacillus. In the above case the second puncture, made four days after the first (which showed a polynuclear reaction and the bacillus) yielded sterile fluid showing a predominant lymphocytosis. Comparison of the result of cultures made from the *blood at the same time as cultures from the cerebro-spinal* fluid would be of interest. But only one case is recorded—by Jemma—in which the culture made from the blood was negative, while that from the cerebro-spinal fluid was positive. From the clinical standpoint three principal forms of meningitis could be distinguished in the 13 cases. In the first group the meningitis usually supervened from the fifteenth to the twentieth day, more rarely during convalescence. The course of the fever was a little modified; its classical signs, especially the rose spots, were a little late in appearing, and constipation was usual and gave place to diarrhœa only towards the end, and finally the serum reaction was delayed. This form occurred in nine cases, of which four were fatal. In the second group (two cases) symptoms of meningitis suddenly occurred without anything to suggest enteric fever, and the diagnosis was made only by culture of the cerebro-spinal fluid obtained by lumbar puncture, which was confirmed by the appearance of signs of typhoid fever about the tenth day. Both patients recovered. In a form still more difficult of diagnosis (two cases) the course resembled that of cerebro-spinal meningitis and no signs of enteric fever appeared. The diagnosis could be made only by culture from the cerebro-spinal fluid. The meningitis constituted the sole reaction of the organism to the bacillus. One of these cases was fatal.

THE ITALIAN OFFICIAL REPORT ON MALARIA.

THE highest tribunal of hygiene in Italy—the "Consiglio Superiore della Sanità"—has just been considering the report drawn up by Professor Badaloni of Naples in "La Lotta contro Malaria," and, on the motion of Dr. Santoliquido, Director-General of Public Health, has ordered it to be made *publici juris*. The report, based on inquiries extending over the period when State intervention against the malady was initiated to the present year—from 1902 to 1909—gives signal proof of the efficacy of the measures adopted, with exceptions to be noted presently. First in importance in diminishing the mortality from the disease must be placed the diffusion, at a moderate price, of good preparations of quinine, and the supply of these gratuitously when beyond the purchasing power of the individual. This gratifying diminution was obtained in regions to which the "bonifiche idrauliche e telluriche" (reclamation of the soil by hydraulic and agricultural methods) had not been applied, a fact, however, which by no means excludes the inference that the result would have been still more gratifying in regions where the methods indicated had been put in practice. The tenure of the report makes it evident that "hydraulic and telluric bonification" must henceforth go hand-in-hand with the cure till, *viribus unitis*, *the poison is stamped out altogether*. No real influence, proceeds the report, in the diminution of mortality from malaria can be attributed to the use of the "protezione metallica" (wire gauze). Just as little can be credited to the destruction of "zanzare" (mosquitoes). This finding will certainly be regarded as retrogressive, but it is of interest in view of a recent article in THE LANCET,[1] entitled "Does Malaria ever Occur Epidemically Without the Agency of Anophelines?"—a question which, it is well known, many Italian experts are still prepared to answer in the affirmative. Another finding, vindicated at length in the report, is the doubtful efficacy of the "profilassi chinica" (the prophylactic administration of quinine). The anti-malaria cure must be practised either in the "epidemic period" or (if attempted prophylactically) in the "inter-epidemic period" and ought *to aim at the "completo bonificamento umano"* (at the complete physical rehabilitation of the individual). A final finding makes it "indubbio" (certain) that the influence of the preparations of quinine associated with the use of the same medicament as an aid to the "bonificamento umano" is the practice to be pursued in combating the disease when present. The special documents, in the form of reports by experts on the malaria-haunted regions of Italy, as to the efficacy or inefficacy of the measures above indicated, will be read with interest as illustrating and fortifying the findings of Dr. Badaloni, whose "Relazione" is countersigned by all his colleagues on the commission, to wit, Baccelli, Golgi, De Giaxa, Korner, and Ferrero di Cavallerleone—names in themselves a guarantee of the competence and the impartiality with which the inquiries have been conducted and the conclusions formulated.

THE USE OF FORMALDEHYDE FOR PRESERVING MEAT.

THE attention of the Local Government Board has been drawn to the increasing use of preparations of formaldehyde by dealers in perishable foods, the gas being employed in meat safes or as a fumigating agent in the holds of ships in which chilled meat is brought to this country from South America and elsewhere. In a recent report to the Board by Dr. G. S. Buchanan and Dr. S. B. Schryver it is presumed very logically that when formalin or its preparations are offered to, or used by, dealers in perishable foods the intention is to employ the solution as a disinfectant or deodorant so, in fact, as to conceal incipient decomposition and to hide any smell of staleness or putrefaction. The trade appear to regard formaldehyde as a substance which "arrests decay," which is "non-poisonous and non-acid," and which therefore is "of the greatest importance to poulterers and all dealers in perishable articles of food." It appears, further, that special safes are recommended for the treatment of provisions the keeping powers of which may thus be increased in hot weather. Since formaldehyde is a deodorant as well as a disinfectant its use is no doubt recommended also to remove taint. According to the report referred to, the food-stuffs to be treated are placed on shelves or hung on hooks in a safe into which a current of formaldehyde gas is discharged from an apparatus attached near the floor. *Pastilles of paraformaldehyde* are used in this apparatus. The heat of a lamp serves to decompose the pastille into formaldehyde gas. The foodstuffs are left in contact with the vapour in the closed safe for 20 minutes or so and the excess of formaldehyde is then removed by passing a current of air through. For the treatment of milk a sieve is employed which is placed in the roof of the apparatus. The milk passing through the sieve is divided into drops which come into intimate contact with the formaldehyde gas. There can be little doubt that this apparatus is likely to become popular, especially in hot weather, with the proprietors of cafés, restaurants, and similar places. The question remains as to whether the adoption of this method is likely to be fraught with menace to the health of the public. There are substantial reasons, the representatives of the Local *Government Board think, for objecting* to the presence of formaldehyde in foodstuffs, for it has been definitely stated that it may retard digestion even when present in the food in comparatively large dilution, while it is well known that it readily combines with the protein constituents of foods, forming a compound which is less digestible than the original substance. These objectionable properties were recognised by the Departmental Committee on Preservatives and Colouring Matters in Food in 1901, which recommended that the use of formaldehyde or its preparations in foods and drinks be prohibited absolutely. It has been assumed, however, that the penetration of the aldehyde into foods by simple fumigation in a ship's hold or in a domestic safe is negligible, and that no more than a harmless, or even a desirable, surface disinfection is accomplished. From the results of an experimental inquiry made by Dr. Schryver, however, it seems pretty clearly demonstrated that it was possible to recover formaldehyde not only from various parts of a forequarter of beef taken from the hold of a vessel which had been treated with formaldehyde gas, but from parts below the surface, especially where the muscular tissue was not covered by connective tissue or fat. Portions of the beef were also tested after ordinary cooking, when it was found that boiling and roasting appeared to reduce or even to remove the formaldehyde, but grilling appeared merely to make the formaldehyde retreat further into the substance of the meat. As Dr. Buchanan points out, the results have a special significance as regards meat which is treated in a formaldehyde safe, for they indicate that articles such as minced meat, fish, kidneys, and other foods which expose a large surface in proportion to their weight cannot be subjected to this form of formaldehyde fumigation without absorbing relatively large quantities of this disinfectant. It is evident from Dr. Schryver's results that special methods are required if the addition of formaldehyde to meat is to be detected with certainty—methods, in fact, which must be applicable not only to the estimation of the free aldehyde but also of the polymerised product and of the aldehyde which has entered into combination with the food constituents. This fact probably accounts for the statement by a firm supplying formalin safes that no disinfectant can be discovered in meat which has been treated by the process. It seems logical to conclude also that formaldehyde is ineffective as a preservative unless present in a quantity in excess of that which possibly may be decomposed by tissue.

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[1] THE LANCET, July 24th, 1909, pp. 237.

IN the column dealing with the Services we publish the outline of a scheme submitted by the Army Council to the various Territorial county associations in England and Wales concerning the formation in connexion with each association of voluntary aid detachments for the treatment and transport of the wounded in the event of an invasion of the country. The scheme has been elaborated with the coöperation of the Council of the British Red Cross Society, the members of which are allotted an important share in the proposed organisation. The scheme is noteworthy by the fact that it provides for the permanent establishment of detachments of medical and other women trained in Red Cross work in a position which will give them a definite function in the Territorial Army.

RUSSIAN MILITARY TUBERCULOSIS SANATORIUM IN FINLAND.—According to the Finnish journal, *Birsch. Värd*, the Russian Ministry of War is erecting in the heart of the Finnish pine-forest domains, a tuberculosis sanatorium for the men of the Russian regiments of the Guards, capable of accommodating 500 patients.

LUNACY IN MANCHESTER.—Of the large number of lunatics certified last year Manchester contributes its full share. The total for England and Wales is 128,787, and the rate of increase since 1905 is over 2000 a year. Manchester heads the list of the county boroughs with an increase of 98. The total number of lunatics chargeable to the union and parish rates in Manchester was 2159, and chargeable to county and borough rates was 52, the total being 2211, of whom 1094 were females.

MOTORING NOTES.

By C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Some Suggestions as to the Care of the Car in Hot Weather.

THE recent and late arrival of summer, unattended by fanning breezes, makes roadside stops the reverse of desirable, and as with the present temperature the wax insulation and filling-in of coils is liable to melt, possible short circuits in engines with coil ignition can be avoided by protecting the coil boxes with asbestos sheeting. Another advantage at this time, when even the effort of pulling the starting handle round to start the engine is exhausting, is to have trembler coil ignition, as with this form the motor will frequently start on the switch. Magneto-fired motors can now be started by merely pressing a button. This device is put on the market by the Aston Motor Accessories Company, Limited, of Birmingham; it consists of an accumulator the current from which is made to pass through the magneto-armature in the correct direction, so that it does not hurt the magnets, but rather strengthens them, and, of course, it causes a spark in the cylinders, so that pressing the button starts the engine. This invention is very simple and can be fitted to any existing magneto. Other points worthy of consideration are the lubricators, the carburettor, and the tyres. With all forms of lubrication it is important to bear in mind that in hot weather the oil is thinner and therefore drips more readily; so to obviate smoky exhaust, and possible sooty plugs, it is as well to regulate the drips that they may not be too generous in the quantity of oil they deliver to the engine. Petrol, too, will vaporize more quickly, so if possible the air inlet should be opened more fully, and if this is not practicable a Rotherham lubricator can be screwed into the side of the air intake-pipe, which can be tapped to receive it; if the lubricator be then opened more air will thus enter. Another device is to drill a hole covered with gauze in the pipe, and if this be done a ring can be fitted to obliterate the aperature on the return of cooler weather. With the heat and dust it is possible that foreign matter may enter and either block the gauze over the petrol inlet at the float chamber or, if a strainer is not fitted, the jet itself may become choked. A halt to remove and clear the jet is not inviting and it is well to obviate it by fitting a gauze strainer where the petrol pipe enters the float chamber. If such a foreign-body filter be employed prior to leaving home it is as well to make sure that the gauze is not rendered impervious to petrol by dust. Personally, I am an advocate for the pumping hard of tyres, a fully inflated inner tube has, I am sure, a longer life; still air expands more in the sun than in the cool garage, and this should be borne in mind when seeing to the tyre pressures before starting out. A burst cover means, even with a Stepney, some minutes' delay, and with the thermometer at 84° F. in the shade putting on that useful and excellent invention does not conduce to a proper appearance for the paying of professional calls. A pressure of from 75 to 80 pounds will be ample for the average-sized driving wheel tyres and less for the front wheels.

Hints on Driving a Motor-car.

Most purchasers arrange, when buying a car, that a professional should accompany them when they take delivery, and anyway give them a few hours' instruction in the management and driving. They thus learn where the petrol tank is, the importance of using a strainer when replenishing so as to prevent the entrance of any foreign body, then to inspect that the water-tank is full and that the circulation is clear, the lubricating reservoir full of suitable oil, the grease cups filled and screwed on tightly, and that the crank case, gear box, and differential chamber contain the requisite lubricant. Retarding the spark and observing that the gear lever is in the neutral notch, the engine is started, and mounting, the driver's seat is taken, the ignition slightly advanced, the clutch depressed, the throttle opened, and the gear lever advanced into the first speed, and, taking care that the brake is off, the clutch is gently let in, and then away should glide the car. I have heard what I looked like myself some ten years ago when first I essayed to command an automobile, and I have seen and helped many other beginners since. The grave face shows that the importance of the occasion is realised; a wide berth is given to the curb and passing traffic, and with scrupulous care the amateur keeps to his correct side of the road. Joy and elation are experienced when the "Thing" goes; it is taken out for a few miles, turned round where the road is wide and no one is about, and then driven home. Probably after a short trip on the first speed the clutch will be depressed and the second gear brought into mesh and [illegible] and should give confidence to the driver, though this should not be abused, as the frequent use of the brakes is bad alike for tyres and machinery. Then the car may be taken to a hill, letting the sprag, if there is one, down, and when the engine begins to slacken, declutching and dropping into a lower gear. Changing down as well as into a higher gear is a mere knack; all that is needed is that the teeth of the wheels which are to be brought into mesh should be in such a position that the teeth of one wheel are just opposite the spaces in the pinion into which they are to slide, as otherwise grinding, and maybe even a broken tooth, may result. A careful driver, after declutching gently, moves the speed lever, and can tell by the feel when the spaces and teeth coincide and then will engage them. It is important for the would-be chauffeur to learn to do this, and, as I have already said, it is merely a knack, which with a little practice and patience can soon be acquired. It is as well to first try on the level, for if the gears are missed on a hill, if the sprag jumps the car may run backwards; still, even then an accident should not result if the brakes are put on quickly, and if they have been kept adjusted and act. Having learnt how to drive forward, and how to stop suddenly in cases of emergency and gently for ordinary pull-ups, reversing and driving backwards should be attempted. It has to be remembered that the car must be brought to rest and, of course, the clutch withdrawn before the gear lever is drawn into the reverse, and then, looking backwards, reversing may be practised. I believe that it is best to learn driving on one's own car, and, of course, those who feel nervous can usually arrange with the makers of whatever car they select that an instructor should remain with them for some days, or any way until they feel confident. Those who desire instruction prior to purchasing will find that most dealers are now prepared to give lessons. In London driving lessons are given by capable instructors to members and servants of members by the Royal Automobile Club. Driving lessons, as well as instruction in the mechanism, &c., can also be obtained at Motor Schools, Limited, Heddon-street, Regent-street, London, W.

Some excellent road maxims have been compiled by the editor of the *Car*. He first advises motor-car drivers always to assume that other road users may do the wrong thing, and this is very true, for pedestrians often hesitate and try several courses, and as to taxi-cab drivers you may expect anything. From experience in driving about town, I know that these individuals will pass over and turn off without holding up a hand; also that they will cut in to their own side again much too soon after overtaking another vehicle. Another maxim is that it is the driver's business, not the other man's, to avoid danger. This aphorism, too, might with advantage be impressed on taxi-cab drivers. Of course, in all cases of accident, irrespective of whose fault, the motorist should stop and render any help he can; and for his own sake, in view of possible future accusations or proceedings, he should obtain the names and addresses of any witnesses. It is also advisable to drive slowly when approaching cross roads, passing schools or churches, or turning a corner. However good the brakes may be, it is not always easy to pull up dead at a moment's notice if the car has any way on it. Therefore it is not wise to follow closely in the track of another vehicle, as in the event of that vehicle suddenly stopping it may be difficult to avoid a collision. Always hold up the hand when stopping, and when turning off hold out the hand on the side on which you intend to turn off. Use great caution on approaching any stationary vehicle, especially trams, as they may obstruct from your view a pedestrian or a passenger alighting. There is a regulation, too, that such vehicles are to be passed on the right or off side, but I understand that this will shortly be amended. A temptation, and one to which I fear that in my earlier days I used to yield, is to pass a street refuge on the wrong side, so as to get by a string of slow-moving carts, but the risk makes it really not worth taking, and, in addition, it is not allowed. As to the real one danger—side-slip—the best preventive is to use "non-skids," such as the Continental armoured tyres, if the roads are greasy—anyway, this may be done until the driver has developed confidence and the instinct of how automatically to act if a skid occurs.

How to Reach Home with a Broken Mechanically Operated Inlet Valve Stem.

The easiest way of doing this is, of course, to carry a spare valve and to replace the broken with a new one. If the "spare" is not to be had the end of the damaged valve can be drilled to take a thin nail, which will make the valve stem once more of the correct length, so that when the valve is home on its seat the head of the nail almost touches the top of the valve tappet. The nail can be made secure in the remains of the valve stem by driving in a very thin French nail so as to key it in position. If a nail is not procurable, though most motorists carry such things, having, as a rule, found them in their tyres, then by cutting off some turns of the inlet valve spring so as to make it weaker, the stump of the valve stem can be passed through the spring. A washer can be slipped on and held in place by a nut, which can roughly be forced on to the end of the stem and fixed by burring the stem over it. Of course, a better job is to screw thread the tip of the stem. The mechanically operated valve is thus reduced to becoming an automatic valve, and providing the spring is sufficiently weak it will work as one.

Argyll Cars.

Messrs. Argylls, Limited, have just issued a new catalogue of their cars. Some particulars of their automobiles were given in THE LANCET of May 30th, 1908, and it will be noticed that the 14–16 h.p. model is now provided with dual ignition, having high-tension magneto in addition to the accumulator and coil method of exploding the mixture, which until now was the only one fitted. The price, too, has been reduced, while a complete and efficient set of tools and "spares" is supplied with every car. The company have been completely reorganised, and in addition to the 14–16 h.p. model they are especially drawing attention to an entirely new model, a four-cylinder 12–14 h.p., which is designed on the unit system and is well suited to fulfil the requirements of the medical motorist. Fitted with a two-seated body, it appears very good value for the price asked—£275—and for an additional £10 it is supplied with a standard side entrance body. The "over-all" length is 11 feet 2 inches, which is also an advantage for a medical man, as this permits of easy turning. The catalogue, in addition to giving particulars of the various models, has some excellent line drawings of the leading components of the chassis. It can be had on application at Argylls, Limited, Alexandria by Glasgow, or from their London Depôt, 6, Great Marlborough-street, W.

On the Cost of Running a 14–16 h.p. Argyll Car.

Dr. J. R. Holmes of Bostal Hill, Plumstead, writes: "I bought a 14–16 h.p. Argyll car fitted with a standard side-entrance body in May, 1907. I unfortunately did not have a speedometer fitted, so I am unable to give the actual distance run, but I have done about 1500 miles touring a year, and, in addition, have had the car out nearly every day for my medical work. Excluding tyres, the only repairs and stoppages I have had are as follows: Block in petrol-pipe, due to some foreign body; hind bolt, holding radius rod in bracket, dropping out. Neither of these delays occupied more than ten minutes. I have occasionally had the car overhauled by my chauffeur, and the following replacements were on some of these occasions carried out: New balls fitted in ball race near brake drum on back axle, three were broken; new guide to one exhaust valve, to replace one which had worn; new bearings to through shaft in gear-box; new bush to differential; new water circulating pump. About £18 would more than cover the cost of these replacements. The cost for tyres was at first heavy, as they were 810 × 90, and rather small for the weight of the car; 815 × 105 non-skidded last for about nine months on the rear wheels; of course the front ones, which are of the round tread kind, run for much longer. The car averages about 18–20 miles to the gallon of petrol. I consider the car now, after two years' running, to be in very good condition; in fact, quite recently she gained the hill-climbing prize at the Brooklands Meet of the Blackheath Automobile Club."

Publications Received.

From the point of view of the medical motorist there is much general information in "The Chauffeur's Companion," by "A 4-inch Driver" (Messrs. Mills and Boon, Limited), and the volume is bound to interest and be of use. The author starts with a brief and very clear description of the internal combustion engine, and the method of conveying the power obtained from it to the road wheels. The chapters on management, driving, and road stops should certainly help to make the reader one of those lucky individuals, and some really exist, for whom any old car will go. Some of the advice to prospective buyers who order a special body is worth the consideration of the profession, especially as so many doctors order a special body. "Specify everything. Body builders are simply ruinous for extras, and they will charge you any price they think fit if you do not tie them down very tightly. Make the builder keep the body low and have the boards of the seats (not the cushions), especially the back ones, built two inches higher in front than at the back." The writer knows from experience that the difference in comfort is extraordinary.

THE ANNUAL REPORT OF THE GENERAL BOARD OF COMMISSIONERS IN LUNACY IN SCOTLAND.[1]

DURING the year 1908 there was, in the jurisdiction of the Commissioners in Lunacy for Scotland, an increase of 267 in the number of registered lunatics, 223 of these being pauper patients and 44 being private patients. Since 1858 the number of lunatics on the register of the Board has increased 206 per cent., while the increase of population during the same period has been 59 per cent. The total number of private patients rose slowly but steadily for many years, but from 1898 to 1903 the proportion remained unaltered, and since then the numbers have fluctuated slightly, but have shown no real increase. The proportion among pauper patients increased steadily up to 1905, after which the rate of increase either fell or proceeded slowly. In 1902 the number of both classes of patients added to the register amounted to 3669. That number has never since been attained, and was markedly less in the years 1905, 1906, and 1908. A decrease of 105 took place in the last year, as compared with the previous year, which but for a decreased rate of removal from the register by discharge and death must have resulted in a decrease of the total number on the register, notwithstanding the increase of population of the country generally. From 1874 to 1883 an average annual increase of 40·4 persons per 100,000 registered as lunatics occurred, and from 1884 to 1893 the average increase was 41·3. In the succeeding ten years a marked rise took place, the average proportion for that period per 100,000 being 49·2. This period, from 1893 onwards, appears to have coincided with the extensive development of the hospital side of asylums, but this influence appears now to have reached its greatest strength, as during the last five years the average has fallen to 47·7. It would therefore seem that there is a decrease of occurring insanity in forms calling for certification.

The proportion of recoveries among private patients has varied from year to year, but it has shown no certain indications of falling off. Among pauper patients a continuous decrease is recorded between 1880 and 1904, and in the past four years a tendency towards a still further decrease seems to have obtained. It appears that the recovery rates have in recent years been unfavourably affected by the increased use of observation wards connected with the parochial hospitals of several large parishes. These wards receive persons suffering from passing attacks of mental disorder, of whom some, in the absence of such wards, would have been removed to asylums, and would have been discharged recovered shortly after admission. The lowering of the rate is also to be ascribed to the accumulation of chronic patients and to the fact that improved nursing and hospital care have led to the use of asylums for the reception of patients whose age and mental and physical condition are such as to preclude hope of recovery. So far as the death-rate is concerned, there does not seem to be any material change from the rate of preceding years.

The report contains an exceedingly interesting account of the attitude of the Board towards those whom it terms "mentally affected boarders under private care who are not certified." The attitude is so enlightened that it deserves very special attention from the profession at large, and we would also venture to say from the English Board of Commissioners. In England no provision is made for those who are mentally affected but whom it would be mischievous, or absurd, or both mischievous and absurd, to certify. Such a patient cannot be received by those who alone are competent to look after him and assist his cure, but must perforce be certified or kept amidst those home surroundings which are notoriously inimical to his welfare. In Scotland, where a visit from a Commissioner is not regarded by the visitor and the visited as a domiciliary police inquisition, the Board requires the names of uncertified boarders in the houses specially licensed by it to be reported, and if an interview is thought desirable such persons are seen by the Board's medical visitors, who satisfy themselves that certification is not called for. We would draw the attention of our readers to the fact that it is to the medical visitors that this duty is very properly entrusted. The necessity for the sanction of the Board to the residence under private care of mentally affected persons and its right to interfere and to have official knowledge are statutorily limited to the cases of such persons as are found to be insane or whose estates have been placed under the control of the Law Courts owing to their inability to manage their own affairs. Its sanction is not required in the case of patients whose insanity is not confirmed and who have been placed under private care for a period which cannot exceed six months upon a special certificate, nor is there any statutory obligation that it should have knowledge of them. The power of the Board to interfere in such cases would destroy the object of the provision, which the Board regards as an excellent feature of the Scottish law. It does for the wealthier class what is done in the poorer class by those large parishes which have established observation wards for a similar kind of patient. Persons affected with some mental peculiarity not amounting to certifiable insanity but yet rendering supervision necessary are frequently the cause of great domestic distress. They are neither fitted for asylum life nor for home life, and if no means existed for having them suitably supervised and cared for the position of families having such members would be an extremely sad one. In England we would point out there is no such provision, and where hardship is not inflicted it is because the provisions of the law are regarded as antiquated and impracticable, and are therefore disregarded. According to the report, persons willing to receive such boarders, and to afford them the necessary protection and care, fulfil a most useful function and ought not to be interfered with so long as no abuses arise. Many such guardians come within the Board's jurisdiction, but it is further more or less unofficially known to the Commissioners that there are others—such as medical men, ladies, and nurses—not holding their special licence who are willing to receive boarders of this class. Some of these are well known to the Commissioners and invite inspection by the Board's visiting officers. The Board has no special means of ensuring that it shall have a knowledge of all such persons, but it has reason to think that the majority is known to it, and instances have been extremely rare in which any interference has been called for. As a rule, such guardians do not look upon the Board as a body viewing their occupation inimically. They are in consequence open with the Board, and in cases of doubt or difficulty readily consult with the Board's officers, with whom relations are thus established affording the best guarantee against abuses.

It is sometimes contended that the influence which may be exerted by insane boarders upon the children and adult members of a household may be an unfortunate one. One of the Scotch Commissioners after many years' wide experience can only recall four or five instances of insanity appearing in the families of unrelated guardians, and its occurrence in these few instances was rather due to other causes than to the presence of the insane in the house. The same Commissioner speaks in terms of commendation of the efforts of the parish of Ruthven to provide for its patients under private care. Another Commissioner describes interesting cases of improvement in the mental state of patients in private houses arising from circumstances which could only occur under that mode of care. It is interesting to note that the lunatic wards of poorhouses are inspected by the Board, and on the whole the impression derived from the report thereon is a favourable one.

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[1] Fifty-first Annual Report of the General Board of Commissioners in Lunacy in Scotland. Printed for His Majesty's Stationery Office, by James Hedderwick and Sons, Limited, Glasgow. Price 1s. 3d.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of London.—Dr. William Collingridge begins his ninth annual report in a retrospective and comparative vein, and he takes us back 60 years, to a time when Sir John Simon, the first medical officer of the City, was calling attention in his graphic and forcible style to the need for a better water-supply in these words. "In the City of London the supply of water is a fraction of what it should be. Thousands of the population have no supply of it to the houses where they dwell. For their possession of the first necessity of social life such persons wholly depend on their power of attending at some fixed hour of the day, pail in hand, beside the nearest stop-cock, where, with their neighbours, they wait their turn—sometimes not without a struggle—during the tedious dribbling of a single small pipe." And Dr. Collingridge might, if he wished to do so, describe the gradual sweeping away of the shallow wells, the progress and disestablishment of the old water companies, the creation of the Metropolitan Water Board, and, curiously enough, the sinking of private wells right down into the chalk of the London basin, for no other reason than that it was found cheaper to do this than pay the charges of the Water Board. Dr. Collingridge states that a considerable number of artesian wells have recently been sunk in the City, and that more are in contemplation; the water yields on analysis excellent results. Sir John Simon's description of the housing conditions in the City only 60 years ago seems to us in these days little short of appalling "It is no uncommon thing in a room 12 feet square or less to find three or four families *styed* together (perhaps with infectious diseases among them), filling the same space night and day—men, women, and children in the promiscuous intimacy of cattle." The night population of the City in 1901 was 26,923, but there was no day census taken at that time, and Dr. Collingridge is hoping that there will not be a similar omission in 1911, since he rightly regards it as essential that the number of persons for whose well-being during their working hours the Corporation takes such an active interest should be officially ascertained. It may be added that the cost of taking the last day census was £1350. There was in the summer of last year an outbreak of illness in a large business establishment which was traced to the use of a much advertised rat poison which was said to cause a fatal contagious disease among rodents, but to be harmless to domestic animals and human beings. Only such persons were attacked with vomiting, diarrhœa, and cramp as had dined in a certain room under the floor of which a large number of decomposing mice were found, the mice having been killed by the use of the virus in question. It was apparently concluded that the mice carried the poison about on their feet and thus infected the furniture, plates, and other articles in the dining-room. Dr. Klein found an organism in the stools of the patients which was identical with that found in the virus. With the view of encouraging the process of cremation the Corporation has, at Dr. Collingridge's suggestion, reduced the charges for cremation at Ilford. This method of disposing expeditiously of human bodies finds little favour with the less educated classes and it is an interesting fact that if the list of those who have undergone cremation be examined it will be found how largely the names of well-known persons predominate. The explanation is probably to be found in the fact that to make the necessary anticipatory arrangements for the performance of this ceremony requires more philosophy than is [illegible] As the secretary of [illegible] rves, "Cremation in [illegible] to persons of some intellectual distinction. The average citizen is still held in the bondage of custom in which sentiment has taken root so deeply as to make it hard to eradicate." At the instance of the Corporation, in conjunction with the Chamber of Com- [illegible] was made by three [illegible] or R. T. Hewlett, [illegible] by Dr. Collingridge [illegible] The results in many [illegible] the investigators, two of wl [illegible] reported [illegible] not steril [illegible] Dr. Collingridge made praiseworthy efforts to bring about the marking of New Zealand tinned foods in such a manner as to indicate when and where they were packed, and it is much to be hoped that he will be as successful in his efforts as he has been in dealing with the soda-water industry in the [illegible] report as to meat-supplies during 1908.

The City of Birmingham.—The general death-rate of this city, with its estimated population of 558,357, was for 1908 only 15·9 per 1000, which is the lowest death-rate ever recorded, the corresponding rates for Glasgow being 17·7, Liverpool 19 2, and Manchester 18·2. Dr. John Robertson gives, however, reasons for concluding that the methods adopted by the Registrar General in estimation of populations over-estimates the people of Birmingham by some 25,000 to 30,000. The central portion of the city is decreasing steadily in population, a large number of people seeking [illegible] being more wholesor [illegible] too, it is cheaper. [illegible] ge is that a large number of people, who during the day earn their livelihood under the protection of Birmingham corporation reside in districts beyond its operations, and Dr. Robertson foresees, if the present drift continues, as it assuredly will, a condition of affairs not unlike that of London, where there is, he says, much overlapping of authorities. He trusts that some means will be found to prevent a similar occurrence in Birmingham. In his opinion there is a well-defined area for a town such as Birmingham, and he suggests that a radius of five miles from the centre of the town might, now that the means of communication have so greatly improved, be taken as a convenient limit. Possibly Dr. Robertson is contemplating a scheme which would extend the city limits to this limit, and if so, and if this extension is allowed, there will soon be a very great increase of the population of what will then be called Birmingham. But Parliament seems somewhat shy of these great extensions, as was shown in the case of Liverpool when she sought to swallow up Bootle. But Parliament and ideas are apt to change. To turn, however, to less debateable points, there is much of interest in the report before us, and the figures relative to [illegible] instructive. Of the cases admitted [illegible] of scarlet fever 145, or [illegible] not to be suffering from this disease, and it seems that of these 145 cases no fewer than 45 contracted the disease, of whom 18 per cent. died. This is a sufficiently serious matter, and it raises questions as to whether there should not be diagnosis at home before removal by a recognised expert. The large number of erroneous diagnoses in 1908 seems to have been in great measure due to an epidemic of German measles. In the case of diphtheria 44 out of 510 admissions were wrongly diagnosed, but fortunately none of them contracted diphtheria in hospital—a fact which may be partly explained by the lower infectivity of the disease and partly by the fact that each patient certified to be suffering from diphtheria is placed in a separate ward until the diagnosis is confirmed or negatived. Apparently this is not so with patients certified to be suffering from scarlet fever, and such isolation accommodation would have to be upon a very large scale. But omission to provide a large number of small wards is certainly the strongest criticism which can be directed against isolation hospitals generally, although the cost of their provision in adequate numbers would be almost prohibitive. However, there is a reasonable mean in all these cases. As regards the antitoxin treatment of diphtheria, it appears that it is not resorted to as much in the poorer as in the better circumstanced districts in spite of the fact that the University provides supplies of antitoxin.

4. In the scheme the county system has been adopted, because it is the system upon which the Territorial Force is organised, and which the British Red Cross Society has adopted as the basis of its constitution.

5. The County Association therefore is charged with the responsibility of the organisation of voluntary aid in the country.

6. Each County Association should through the medium of the local branches of the British Red Cross Society form " voluntary aid detachments," with an establishment which is laid down in the scheme; also each county group of voluntary aid detachments (and there need be no limit to the number of such detachments), should be under the command of a County Director, and each detachment should be capable of being used either as a clearing hospital, or as a rest station, or as an ambulance train *personnel*, as the circumstances of the moment may demand in the time of war.

7. Each voluntary aid detachment should therefore be trained in such a manner as will enable it to perform any one of these functions.

8. The training and equipment of voluntary aid detachments will be carried out in whatever way the British Red Cross Society may think fit; but they should be so arranged as to enable the detachments to make use of local resources [illegible] -tion and transport of wounded, and fo [illegible] care and treatment until they reach the [illegible] chments would therefore be specially [illegible] ded, and women's detachments in the preparation of food and in nursing duties.

The *personnel* recommended for each Voluntary Aid Detachment is as follows:—A. Men's Division (British Red Cross Society): 1 commandant and 1 assistant-commandant (if possible these are to be officers with military medical training); 2 medical officers; 1 quartermaster and 1 assistant-quartermaster; 2 pharmacists and 2 assistant-pharmacists; 4 under officers and 48 men. B. Women's Division: 1 commandant and 1 assistant-commandant (these being medical officers); 1 quartermaster and 1 assistant-quartermaster; 2 lady superintendents and 20 women, of whom 2 shall be fully trained nurses. This establishment allows of the divison of the whole detachment into two completely organised halves.

9. In order to obtain some uniformity in the standard of efficiency of voluntary aid detachments there will be annual or other inspections by military authorities, and a return of the members of each detachment will be submitted through the county associations to general officers commanding-in-chief periodically by each county director of voluntary aid detachments.

10. In time of war the evacuation of sick and wounded of the Territorial Forces will be under the direction of officers of the Royal Army Medical Corps or other officers appointed for the purpose, and voluntary aid detachments will be placed at their disposal and under their orders according to requirements.

11. If county associations fail to obtain an organisation of voluntary aid detachments to fill the gaps in the medical service between field ambulances and general hospitals they must report the facts to general officers commanding-in-chief.

12. As regards general hospitals, county associations should either themselves or through the British Red Cross Society proceed to select the necessary buildings in consultation with administrative medical officers, officers commanding the general hospitals, and sanitary officers of their territorial division; and plans should be drawn up showing how the buildings will be arranged for hospital purposes; the organising matron also being consulted regarding these.

13. Schedules of equipment for general hospitals are drawn up in the scheme as a guide. County associations should delegate to the British Red Cross Society the duty of providing the equipment and should satisfy themselves that it will be ready on mobilisation.

14. Supplementary personnel required for general hospitals should be obtained from voluntary aid detachments which will be allotted on mobilisation for this purpose only.

15. Wounded may accumulate in excess of the number of beds vacant in the general hospitals. The formation of convalescent homes and depôts and provision for expansion of the general hospitals must therefore be contemplated. County associations should be responsible for taking the initiative in asking the British Red Cross Society to submit schemes in time of peace for forming convalescent homes and auxiliary hospitals.

Full details of the scheme follow this outline, and three appendices describe (1) the organisation of the medical service of the Army; (2) the organisation and resources of the Red Cross Society of Japan (a report by Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C.); and (3) the detailed equipment of military hospitals (comprising schedules of all furniture, utensils, medicines, and stores).

ROYAL NAVY MEDICAL SERVICE.

The undermentioned Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet:—Thomas Brown Shaw, Alfred Thomas Gailleton, George Sandys Davidge, and Percival Thomas Nicholls (dated August 10th, 1909).

The following appointments are notified:—Fleet-Surgeons: F. W. Parker to Portland Hospital, and P. E. Maitland to the *Albion*, on recommissioning. Staff-Surgeon: J. O'Hea to the *Victory*, additional, for disposal. Surgeons: L. C. Rowan-Robinson to the *Drake*; S. H. Vickery to the *Impregnable*; and W. Mearns to the *Actaeon*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. J. S. Simpson, C.M.G., has been appointed to the Eastern Command for duty. Lieutenant-Colonel A. T. I. Lilly and Major J. Thomson have been instructed to prepare for embarkation for India.

INDIAN MEDICAL SERVICE.

The promotion of Major Asher Leventon is antedated to Jan. 29th, 1907. The promotion of Major Jasper Maxwell Woolley is antedated to July 29th, 1908.

The King has approved of the following promotions:—Lieutenants to be Captains: Arthur Falconer Hayden (provisionally) (dated Sept. 1st, 1908); Percy Strickland Mills (provisionally) and Frank Phillips Wernicke (dated Feb. 1st, 1909); and Charles Richard O'Brien, Norman Haliburton Hume, Greer Edmund Malcolmson, and Duncan Macdonald Cochrane Church (dated March 1st, 1909).

Major F. D. Browne has been appointed to the substantive medical charge of the 112th Infantry, Kohat; and Captain A. S. M. Peebles is appointed to the substantive medical charge of the 18th Lancers, *vice* Captain R. F. Baird.

ROYAL VICTORIAN ORDER.

The King has appointed Fleet-Surgeon Cyril James Mansfield, R.N., H.M.S. *Indomitable*, to be a Member of the Fourth Class of the Royal Victorian Order.

DEATHS IN THE SERVICES.

Brigade Surgeon-Lieutenant-Colonel Edwin James Fairland, A.M.S. (retired), on August 6th, at Bournemouth, aged 65. He entered the service in 1867 as assistant-surgeon, was promoted surgeon in 1873, surgeon-major in 1879, surgeon-lieutenant-colonel in 1887, and brigade surgeon-lieutenant-colonel in 1893. He served in the Abyssinian campaign from November, 1867, to July, 1868 (medal). He retired in 1897.

THE TERRITORIAL ARMY IN WAR.

In an interesting article on "The Health of the Territorial Army in War," in the *Broad Arrow* of August 14th, Lieutenant-Colonel W. Hill Climo, A.M.S. (retired), said that it is an unjustifiable assumption "that, as the Territorial Army will not be serving outside the United Kingdom, it will not be exposed to conditions inimical to health either in regard to its endurance or to environment and climate. Some such optimistic opinions were held about the Boer War, and we know with what disastrous results, though probably the climate of South Africa is the most favourable in the world for the conduct of a campaign, and though no army ever before was so lavishly provided with food and other supplies. An army, organised as the Territorial Army is, if mobilised for service in the Garden of Eden, would, under service conditions, be liable to dysentery and enteric fever. In England it would be impossible to bring 10,000 troops together free from the seeds of enteric fever, which under the stress of war would become epidemic. The best medical service in the world could not prevent its occurrence with unseasoned and immature troops. Voluntary service armies are notoriously the most unhealthy, and the Anglo-Saxon race is perhaps the most susceptible to these epidemic diseases, the brunt of which falls on the intestinal tract."

Correspondence.

"Audi alteram partem."

THE DANGERS OF CARBON TETRA-CHLORIDE.

To the Editor of THE LANCET.

SIR,—I have read with much interest the article published in your issue of August 7th on the toxicity of carbon tetrachloride. Three cases in which ill effects have followed the use of a dry shampoo have recently come to my notice. In the first case, a girl, aged 22 years, became, according to her own statement, "completely unconscious" whilst her hair was being treated with a patent non-inflammable dry shampoo. Under the same treatment at the same hairdresser's a second lady, aged 26 years, became "deafer and deafer" until she was obliged to ask the operator to desist, fearing that she was going to faint. At another establishment a lady, aged 40 years, became so faint during the application of a dry shampoo that the process had to be stopped. All the windows in the room were thrown wide open, and at the end of half an hour the lady had sufficiently recovered to have her hair hastily dressed. Still feeling very faint and shaken, she was then driven straight to her home in a cab. These three cases occurred before the recent fatal case, and I have hesitated to publish them because although the histories came to me at *first hand they were not given me in my professional* [illegible] investigated. The patients [illegible] certainly free from cardiac [illegible]

I am astonished to learn that in spite of the recent fatality the use of this shampoo continues unchecked, the public being apparently lulled into a sense of security by the medical evidence, which stated that the lady who died suffered from heart disease. The hairdressers justify themselves by stating that although untoward symptoms occur amongst their customers the operators have never been known to have been affected. Their immunity is fully explained by the weight of the vapour of tetrachloride of carbon, which, according to Dr. Veley, is five times that of air. Unless my experience has been exceptional, there should be abundant clinical evidence in support of the views as to the dangers of tetrachloride of carbon which Dr. A. Waller and Dr. Veley base on laboratory experiment, and the use by hairdressers of shampoos containing so poisonous a substance should certainly be prohibited.

I am, Sir, yours faithfully,
August 16th, 1909. J. E. SANDILANDS, M.D. Camb.

THE NATURE OF ANGINA PECTORIS.

To the Editor of THE LANCET.

SIR,—May I trespass on your space to urge once more the desirability of the abolition of the terms "false" angina pectoris, "pseudo" angina pectoris, and the like. In an [illegible] I [illegible]ntributed to THE LANCET [illegible] "angina cordis" might [illegible] of cardiac perturbation. The term angina cordis, moreover, expresses more or less exactly the condition of the heart in these attacks and it can be suitably qualified in accordance with its mode of origin, as, for instance, angina cordis vaso-motoria, angina cordis toxicata, &c. The adoption of this nomenclature would not only get rid of the misnomer and consequent nosological confusion involved in the use of the term "false" angina pectoris, &c., but would also promote much greater precision [illegible] of several hitherto ill- [illegible] Sir T. Clifford Allbutt's [illegible]ion of angina pectoris. As Sir R. Douglas Powell points out, it is hardly possible that aortic stretching can be the only cause of angina pectoris, nor, in my opinion, is it adequate to explain all the symptoms of the anginal attack. Furthermore, the large majority of the conditions that unquestionably give rise to aortic stress are not associated with anginal symptoms; and, on the other hand, true anginal attacks are not very uncommon, in my limited experience, without any evidence, either clinical or pathological, of aortic stretching.

I have urged the importance of the localised patchy distribution of the degenerative changes that may be found in the cardiac wall in cases of angina pectoris, since in the distension and stretching of these diseased areas during the cardiac systole I find an explanation of the phenomena of the anginal syndrome. For a full exposition of this hypothesis I must, out of consideration for your space, refer your readers to my article, but I should like to point out that a satisfactory explanation of the pathogenesis of angina pectoris must account not only for the dolor pectoris but also for the angor animi. I am, Sir, yours faithfully,

London, W., August 14th, 1909. E. H. COLBECK.

To the Editor of THE LANCET.

SIR,—The few remarks which I propose to make on this important question are the result of my clinical experience of a very large number of cases of heart disease. I find that true angina pectoris major (I confine my attention to this) is [illegible] [p]oorer classes, and [illegible] hospital cases of [illegible] th three cases of angina pectoris; on the other hand, amongst the well-to-do classes of [illegible] [f]requently, and especially [illegible] The hypothesis which I [illegible] true "angina pectoris is due to spasm or cramp of the heart muscle, which comes on suddenly after exertion as a rule, and passes off as it came."

I cannot here discuss the various theories which have been advanced by great authorities as to the cause of the symptoms which are so distressing and often fatal, but I will confine my remarks to one or two points. It has been said that angina pectoris is due to sudden dilatation of the auricles or ventricles, either in association with valvular disease or often severe heart strain. My cli[illegible] does not support that vie[illegible] after a severe and punishi[illegible] during a football match, become "winded." The heart has become over-distended and they suffer from acute dyspnœa, but there is no pain and compensation is soon restored. I have never seen the symptoms of angina pectoris occur in a heart with broken compensation, and I thoroughly agree with Sir Clifford Allbutt when he says that the aorta is chiefly associated with these distressing symptoms. Three cases which I have noticed in hospital were of a very severe type and all terminated fatally, but, strange to say, none of the cases died during an attack or even near an attack of angina pectoris. Two of them occurred regularly after an excess of food, the third one developed angina occasionally after smoking strong tobacco. I kept very careful notes of the clinical course and also of the necropsies of these three patients. In the first case the heart was enlarged, weighing 12½ ounces, there was hypertrophy of the left [illegible] aortic valves, and marked [illegible] whole extent. None of t[illegible] tended, and *the left side of the heart was quite empty.* In Case No. 2 the heart was slightly enlarged with hypertrophy of the left ventricle and some aortic incompetence. In this case also the aorta showed atheroma. The heart itself was in a state of firm contraction. The coronary arteries in both these cases were patent and there was very little evidence of *arterial degeneration. In the third case, where the attacks* were induced by smoking, the heart was to all appearances quite healthy and the man died from advanced kidney disease.

To look at the other side of the picture, I have made necropsies on some hundreds of cases of heart disease in all its *forms,* including *aneurysm* and *intra-thoracic* growths, and I am sure that it is the experience of all of us that it is common to see all the various lesions and degenerations associated with the heart without the slightest sign during life of angina pectoris, so that we cannot say *that diseases of the valves of the heart or of the aorta alone* are the cause of angina. There seems to be some affinity or relation between gout, especially the gouty heart, and angina pectoris, and as it is rare to see acute gout in the female so it is rare to see angina pectoris; in fact, I have not met with a true case in the female. Then with regard to its neuralgic character, although the pain is severe and excruciating, extending, as Head has said, into various nervous areas, still the character of the pain cannot be said to coincide with neuralgia. The sudden onset, short duration, and rapid cessation are quite opposed to neuralgia and yet would correspond with spasm or cramp of the heart muscle. It is well known that gouty people are very prone to attacks of cramp, and it is quite feasible to suppose that the heart muscle may be subject to cramp also, and that the administration of any drug which produces dilatation of the arteries may also relieve muscular spasm.

Another point to consider is the extraordinary feeling which the patient suffers of impending death. In many cases, however, this feeling is due to fright caused by the intense pain. Patients have told me that the very thought of the possibility of an attack would produce the same kind of fear, and such patients live in constant dread of an attack. I have recently had under my care a gentleman of highly gouty tendencies who has been subject to attacks of angina pectoris for over 25 years. He had aortic disease following rheumatism, and *although* the pain towards the end of his life was just as acute, yet he told me that the fear and dread

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[1] Angina Pectoris, a Criticism and a Hypothesis, THE LANCET, March 21st, 1903, p. 793.

of death had entirely disappeared because, as he said, he knew he would get relief from his nitro-glycerine or nitrite of amyl. I am quite aware that my contribution to this debate is of very little value, because I cannot reconcile the symptoms produced by angina pectoris with those found during life and after death, and I have come to the conclusion after a long observation of hospital cases that angina pectoris is much more *common* amongst the rich than amongst the poor; that it is associated as a rule with gout; and that it is caused by spasm of the muscular structures of the heart, which is immediately relieved by some vaso-dilator.

I am, Sir, yours faithfully,

NATHAN RAW.

Liverpool, August 16th, 1909.

THE MODERN TREATMENT OF TUBERCULOUS JOINTS.

To the Editor of THE LANCET.

SIR,—In opening the discussion on the modern treatment of tuberculous joints at the recent meeting of the British Medical Association I am reported in THE LANCET to have said: "Bier's congestive method was sometimes useful, but occasionally the results had been disastrous." I stated that disaster had followed the *exclusive* use of tuberculin and of Bier's congestive method, and that they should be used as mere allies to other recognised methods. I am further reported as saying that I favoured the reduction of spinal deformity at whatever stage the disease. I stated precisely the contrary.

I am, Sir, yours faithfully,

ROBERT JONES.

Liverpool, August 16th, 1909.

AN OPERATION FOR THE TOTAL EXCISION OF TONSILS.

To the Editor of THE LANCET.

SIR,—I read with much interest in your last week's issue the letter from your correspondent, Mr. H. B. Mylvaganam, recording the successful performance of the operation of complete tonsillectomy in 300 cases. He does me the honour of associating my method of procedure with his own—"there is practically very little difference in the technique adopted by Mr. Waugh and myself"—and then devotes the rest of his article to repudiating those principles which I regard as essential to my operation and which render it a simple, rapid, and bloodless procedure. I feel, therefore, that I should be doing him an injustice if I accepted the proffered compliment.

He writes as follows: 1. "In operations on the throat and nose the anæsthetic is not pushed to the same extent as required for operations on other parts of the body." 2. "Having partially anæsthetised the patient the head is allowed *to hang well over the edge of the table.*" 3. "It is not absolutely necessary to define the capsule of the tonsil. If any pieces are left behind they can be felt by the finger and removed by the scissors or by the punch forceps." He then continues: "One drawback to this method of removing the tonsils is the hæmorrhage which follows in some cases. It often struck me that the amount of hæmorrage was out of proportion to the quantity of tonsillar tissue removed." Therein I agree with him, only I regard the hæmorrhage as the direct outcome of his procedure which I have detailed above in his own words. It is clear that the amount of hæmorrhage in any operation must depend partially upon the ease with which vessels severed at the site of the operation can retract and contract, and partially upon the avoidance of any procedure which tends to produce local engorgement of the vessels during the operation. By defining the capsule of the tonsil at the first incision the rest of the operation is conducted in the line of cleavage between the capsule and the pharyngeal wall, so that the severed tonsillar vessels can retract immediately into the muscular wall. Consequently, as my experience has shown me, the cessation of hæmorrhage is spontaneous and rapid. I have therefore never used any hæmostatics, not even "hot sponges on holders," nor are there any "pieces left, which can be felt by the finger and subsequently be removed by scissors or punch forceps."

Local engorgement of the blood-vessels of the head and neck can be brought about in two ways—i.e., by the effect of gravity upon the venous circulation, and by the performance of the normal physiological acts of swallowing and coughing. At the end of ordinary expiration there is an accumulation of blood in the extra-thoracic veins. If expiration is prolonged to such an extent as to culminate in the explosive act of coughing the venous engorgement becomes excessive and consequently the flow of blood from torn veins will be free and copious. By the position in which I place my patients on the operating table with merely a sandbag under the shoulders I avoid the effects of gravity upon the venous circulation and at the same time there is a sufficient slope of the pharynx to enable the blood to trickle towards the roof of the naso-pharynx. By the employment of a brief deep anæsthesia coughing and swallowing are prevented. Consequently my operation is strikingly free from hæmorrhage and the position of the patient gives me a view of the field of operation sufficient to remove the whole tonsil. I need no better view.

Mr. Mylvaganam reassures me that he was completely unaware of my method until he read of it in THE LANCET, and whilst he is courteous enough to associate our methods as being similar I must own, that I should have hesitated to do so if he had not suggested it. With regard to the use of the conchatome as a retractor, I must express my indebtedness to Mr. Steward of Guy's Hospital for bringing it to my notice for the purpose of punching out tonsils. I found that when used in that way it soon became blunted, and that then it held tonsils firmly without tearing them. My original paper, which was written nearly a year ago, includes the cases which I had operated on continuously since August, 1906. Since then I have performed the operation on more than 1500 cases, and I still have no untoward events to record.

I am, Sir, yours faithfully,

GEORGE E. WAUGH,
Surgeon to Out-patients, the Children's Hospital,
Great Ormond-street, W.C.

Welbeck-street, W., August 18th, 1909.

A CORONER'S COURTESY.

To the Editor of THE LANCET.

SIR,—Enclosed is a reply I received from the coroner for the county of Anglesea, to a letter of mine reporting a case of sudden death. The man was dead before I arrived at the house. The deceased had never been attended by any medical man.—I am, Sir, yours faithfully,

R. ARTHUR JONES.

Bod Idris, Menai Bridge, August 4th, 1909.

[ENCLOSURE.]

High St., Bangor, N. Wales.

CORONERSHIP.

DEAR SIR,—I am in receipt of your letter stating that a man aged 66 died at Orsedd, Garnedd Goch, last night and that you never attended him, but that you were the Medical Attendant of his brother [illegible] he came to his death.

[illegible] of people in Anglesey dying without [illegible] in no way concern me.

Why, therefore, you send me a note to that effect only I cannot understand as I presume there are hundreds of people dying in Anglesey without your ever attending them, and which, as I have said, in no way concern me as Coroner.

Yours truly

R. JONES ROBERTS.

*** Mr. R. Arthur Jones here went out of his way to give Mr. R. Jones Roberts early notice of the occurrence of a death in his district with regard to which it would be the duty of any coroner to make immediate inquiry in order to ascertain whether it might be a case for an inquest or not. There seems to have been no medical man in attendance on the deceased, but Mr. Jones saw the body very shortly after death, though not before death took place. It was not, then, the duty of Mr. Jones to inform the coroner of the death, in the sense that there was no legal obligation upon him to do so. Had he not done so the coroner would probably have received through some other channel an intimation later that it had taken place. It was just a courteous act on Mr. Jones's part, and possibly also one prompted by a desire to assist the relatives, and to let the coroner know that there was a case for his attention. In these circumstances comment on the coroner's letter is not required: it condemns itself. Fortunately, these cases are rare, and it is to be hoped that the much-needed amendment of the Coroners Act will supply rules of procedure calculated to prevent such occurrences. In the present condition of the law, as we explain this week in a leading article, where no certificate of the cause of death is forthcoming, the preliminary stages which lead up to an inquest or to the dispensing with one are not very clearly marked out. Inquiries have to be made and things work smoothly or not according to the relations existing between the coroners and the medical practitioners. These relations are not likely to be improved by any letter similar to that of Mr. R. Jones Roberts.—ED. L.

THE TERRITORIAL MEDICAL SERVICE.[1]

(FROM A SPECIAL CORRESPONDENT.)

IV.—THE MEDICAL EXAMINATION OF RECRUITS: THE SELECTION OF MEN FOR ACTIVE SERVICE.

THE medical examination of candidates for the Territorial Force is carried out principally by the medical officers of the units concerned. In the regular army all officers of the Royal Army Medical Corps on joining now pass through a course of instruction in recruiting duties, a procedure which is of the greatest value to the State. Medical men who have not had experience of the many slight defects or deformities which interfere with the soldier, and the advantages sometimes taken of these defects by him to avoid duty or to get his discharge by being invalided when he tires of army life, require special knowledge which can only be imparted by expert recruiting medical officers. The physical standards for recruits vary with the various arms concerned. In the regular army the minimum measurements for height and chest girth are those laid down for Infantry of the Line, Army Corps (except drivers), Royal Army Medical Corps, and Ordnance Corps (ordinary recruits). For these classes the minimum standards for men 5 feet 3 inches in height is a chest expansion of 33½ inches, provided its range of expansion is not less than 2 inches. The minimum age laid down for recruits is 18 years, but in certain units (Army Post Office Corps, certain sections of the *Royal Engineers, and Army Ordnance Corps*), and recruits enlisted to complete drafts or units proceeding abroad, the minimum age standard is fixed at 19 years. The *majority* of recruits (95 per [illegible]
estimated that most of then [illegible]
work of a mature soldier [illegible]
available statistics (1907) regarding recruits medically inspected in the United Kingdom for the regular army show that of 59,393 recruits inspected in that year, 16,906 were rejected on inspection and 607 were rejected as unfit within three months of enlistment, giving a total for rejections of 17,513 and ratios of rejections per 1000 inspected of 284·65, 10·22, and 294·87 respectively. The figures for the decade 1897 to 1906 are even higher. The most common causes of rejection per 1000 inspected in 1907 were: (*a*) under chest measurement, 49·72; (*b*) teeth, 48·17; (*c*) heart, 29·25; (*d*) vision, 24·06; (*e*) defects of lower extremities from fracture, contraction, luxation, &c., 17·04; (*f*) varicocele, 11·42; and (*g*) under height, 10·49. The chief defects causing discharge from the service within three months of enlistment for the same period per 1000 inspected were: (*a*) heart, 1·73; (*b*) nervous system, 0·93; (*c*) weakness of intellect, 0·86; (*d*) defects of lower extremities from fracture, contraction, luxation, &c., 0·74. These, the principal causes of rejection, are of the utmost importance to all Territorial recruiting medical officers as they indicate the deficiencies most to be looked for, and when we examine the invaliding figures of the regular army it may be noted that as regards the relative importance of the different causes of invaliding, diseases of the circulatory system hold first place. This has been attributed to various causes; in the case of valvular disease occurring within the first year of service to inefficient recruiting, and in the case of disordered action of the heart within the same period to the effects of military training. It may be mentioned that the so-called disordered action of the heart met with in the service is not necessarily always functional, but may be due to dilatation of the stomach. It is understood that investigations are being carried out on this subject by the military medical authorities. The six principal causes of invaliding from the army since 1880 have been diseases of the circulatory system, tubercle, diseases of the nervous or digestive system, rheumatism, and syphilis. A brief note on some of the principal causes of rejection or discharge may now be considered.

Diseases of the heart.—The heart is perhaps the most important organ to be examined in a candidate for enlistment. The greatest possible attention must be paid to organic lesions, also to functional affections of the heart, and men must be rejected if found suffering from any marked degrees of irregularity of cardiac action which do not tend to subside after a reasonable period of rest. The accepting of recruits with hæmic or temporary bruits, while not advisable in the regular army, should only be allowable with caution in the Territorial Force, and such recruits if passed must be warned of the dangers they risk on strenuous marches, field days, &c. The cigarette habit must not be lost sight of in its rôle as a causal factor of functional disordered action of the heart. With a view to help men to overcome the habit Territorial medical officers should advise their commanding officers to prohibit the smoking of cigarettes at certain times, when pipe-smoking would be made allowable instead.

Teeth.—Loss or decay of many teeth causes nearly 17 per cent. of the number of all rejections for the service if we exclude failure to attain the physical standard of size. The South African war caused a high standard to be laid down, but opinion is now held that the inefficiency attributed to defective teeth was then much over-rated, and that a great proportion of the dental troubles were due to scurvy from want of fresh food, meat, and vegetables, added to the prolonged duties in the field. In some cases the teeth of recruits may be brought up to the standard by dental treatment. The acceptance or rejection of a recruit on account of loss or decay of several teeth depends upon the relative positions of the sound teeth. Thus the loss of several contiguous molars on both sides interfering with efficient mastication, or, again, the loss of many teeth in a recruit of an indifferent constitution, would point to rejection. In the case of the Territorial recruit the standards laid down for the regular army as regards the teeth may be more elastic and the criterion of dental fitness should depend on the general nutrition of the candidate. Special attention should be paid, however, by Territorial medical officers to the question of pyorrhœa alveolaris which is not uncommon in young men. It is more commonly found on one side of the mouth associated with deposit of tartar and can be often remedied by application of peroxide of hydrogen. Its presence has such an important bearing on the general health that the condition should never be overlooked.

Varicocele.—This condition formerly used to be the cause of a fair number of rejections in recruiting, but latterly it is viewed with greater leniency. There is said to be a widespread belief that even a slight degree of varicocele is responsible for impotence, and the demand for operation may be attributed to this fact rather than to any pain or other trouble. But the question of varicocele is a complicated one.[2]

Flat feet.—Recruits who show by practical tests that the arches of the feet are strong may be accepted, although the feet may appear to be flat. The regulations as modified in 1907 were the means of passing about 500 men into the regular army in that year who would have been rejected under the former rules. The proof that such men became efficient soldiers is shown by the ratio for discharges under three months' service, which have since fallen.

Syphilis.—It is definitely laid down that men suffering from the constitutional form of this disease cannot be enlisted in the army. Men suffering from constitutional syphilis are extremely likely to break down under the strain of active service.

Selection of Men for Active Service.

Here the standards laid down must be much more rigorous.

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[1] Nos. I., II., and III. were published in THE LANCET of July 31st and August 7th and 14th.

[2] See THE LANCET, Sept 23rd, 1905, p. 923, and the important correspondence which followed on Colonel Frank Howard's communication.

In the mobilisation of troops for active service in the field, especially for a tropical campaign, the selection, not alone of the individual, but also of the unit, is of such vital importance as to be what we may almost term the key to the position of success. Many factors enter into the consideration of this question, of which the following are, perhaps, the more important. As previously recorded, any regiment or other unit that has been noted for its sanitary conservancy in barrack life in peace time may be relied on to carry such an attribute with it into the more severe test of active service, and *vice versâ*. For a regiment that is careless of its hygiene in peace may of a certainty be prophesied to fall to pieces with enteric fever or other fell dirt disease in war. The question also of units home from the tropics, shattered and decimated by malarial fevers or venereal disease, will always arise, and, if the individuals debilitated by these diseases be not thoroughly eliminated by strict medical examination prior to disembarcation, they will fill the hospitals on field service and paralyse any regiment from wastage. Such regiments will be a delusion and their strength a paper one, and as they will only reflect the utmost discredit on all concerned they should never on any occasion be allowed to take the field; it is far better for the officer in medical charge of such a unit strenuously to oppose any attempt for it to do other than garrison duty at home. Its officers and men who are "fit" should get opportunity for transfer to staff or other extra-regimental appointments as volunteers for the seat of war, so that disappointment need not ensue.

Passing next to examine the individual, it is, of course, impossible to lay down hard-and-fast rules suitable for all cases, as each must be judged on its own merits.

Age.—The short-service system initiated by Field-Marshal Viscount Wolseley, as is well known, gives us a larger proportion of young soldiers in the regular army than would otherwise be the case; so there is but little age choice when it comes to mobilising a large field force, even when taking into consideration the men of the Army Reserve. Lord Wolseley's views in respect of the value of young soldiers are well known and common property; he deems young non-commissioned officers also as important an essential as young recruits. The history of Napoleon's campaigns, and those of the other great continental Powers, as well as that of our own, all give overwhelming evidence of the fact that old and seasoned troops are much the best. From personal experience, and from the closest possible attention to this subject while attached to units which were invariably employed in the fighting lines during General Buller's handling of the Natal army in the general engagements at Spion Kop, Vaal Krantz, Colenso, Pieter's Hill, relief of Ladysmith, Laing's Nek and Belfast, as well as in many other engagements of lesser importance in Natal, Orange River Colony, and the Transvaal, in which there was a fair opportunity of estimating and reflecting on the value of the influence of age on the health and efficiency of the soldier of all types, from the recruit to the seasoned soldier and reserve man, of contrasting home-bred and colonial, regulars, irregulars, yeomanry, volunteers, and militia, the writer has no hesitation in stating that, from a purely medical point of view, it is less satisfactory to select men under 25 years of age for active service. They are more liable to break down in a protracted campaign from over-strain and fatigue, and to knock under to enteric fever, dysentery, or some other disease. From a military point of view, however, it may be conceded that more initiative in times of emergency was found among men of under 25 years than among the men of more mature age, such as belonged to the army reserve; perhaps this may in some part be due to the fact that the latter, having contracted home ties and settled down from army life, have to some extent become softer in muscle and more cautious of limb. Probably if we strike a mean between the age of the recruit and that of the army reserve man we have the right material for war as British soldiers, for such men should have all the advantages of seasoning and few, if any, of the susceptibilities.

It is hardly necessary to remind our readers that experience in war, and also in peace, has taught army surgeons the bearing that age has on the susceptibility of the soldier to enteric fever, the principal bugbear. Men between the ages of 20 and 25 are by far the most susceptible to this disease, as they have not yet matured. Examples of immaturity may be found in the bones of the skeleton, many of which are not wholly united; moreover, the heart, lungs, and viscera have not matured until the individual has attained his twenty-fifth year. The present short service system robs us of seasoned soldiers; by "seasoned" men is meant the survivorship of the fittest, that is, men with their weaker comrades weeded out by the effect of tropical service, not men who have had tropical diseases, such as malarial fevers or dysentery, as such individuals are especially predisposed to further attacks on the least exposure. The majority of our recruits under the present short service system are under 20 years of age; they do not remain sufficiently long at home, and are sent abroad before they are matured. Under the new, easy-going, and attractive surroundings of a foreign station, these men, one and all, at some period of their first few years' service, contract either venereal disease, malarial fever, or enteric, or perhaps a combination of these maladies, the result being that these diseases, after eliminating the weaker individuals, leave the best educated of the remainder to be promoted to the rank of non-commissioned officers, and these in turn are discharged from the service just as they reach the age and period of seasoned soldiers. One has only to take the medical history sheets of a regiment *en bloc* and go carefully through them when the truth of these statements will be apparent. In Lord Roberts's great march from Cabul to Kandahar the effect of age and seasoning in soldiers was well brought out; all the regiments engaged marched well and improved daily, all except the 72nd; on inquiry it was found that the marching power of only a limited section of this regiment was affected, and that the companies affected were made up of newly arrived drafts of young men. In Natal the writer noticed very much the same sort of thing. During General Buller's forced marches from Ladysmith and Elandslaagte to Laing's Nek, *viâ* Helpmakaar, Dundee, and Newcastle, the Light Infantry Brigade, which acted as advanced guard to the main army, covered distances varying between 20 and 25 miles daily; the troops were all seasoned, save for drafts and volunteer companies that had come out from England, and when men fell out they were invariably found to be recent arrivals. On the other hand, the Lancashire Brigade, to which the writer was for some time attached, were second to none as a fighting unit, but were notoriously slow marchers, chiefly owing to the large number of reservists they counted in their ranks. Sir Thomas Crawford, a former director-general of the Army Medical Department, fixed the low limit of suitable age for active service at 23 years. The Army Sanitary Commission, in reference to Indian trooping, advised that no one under 25 years should be sent to India. The French Foreign Legion in Algeria is composed of only seasoned troops. These, and many other instances, all point to the fact that there can be no possible doubt that 25 is the age we must circle round, preferably over 25, as the most suitable for campaigning in the tropics.

Previous medical history and its bearing on selection for active service.—In the medical examination of the men of a regiment detailed for active service the medical history sheets of each individual must be carefully scanned while they are subject to examination. All cases with lengthy hospital admissions for venereal disease or malarial fever must be particularly gone into, and, *as a rule*, should be rejected as unfit, as the efficiency of a field force depends on the efficiency of the men composing it, and there are no diseases more prone to return or induce debility from functional disturbances of the heart and circulation than malarial or venereal affections. Cachectic and anæmic men, with past histories of malarial fever, should invariably, for this reason, be rejected, as they will break down in the first few weeks of any campaign. In the very first march the Lancashire Brigade made in South Africa, from Chieveley to Frere, a good example of this came to notice. The brigade started from Chieveley at 3 A.M., before dawn, and amid torrents of rain, over tracks covered with mud and slush; it marched until 5 P.M. in the afternoon. Most of the troops had no great coats, having left them in the waggons. The waggons of the Brigade Field Ambulance were filled to their fullest extent, the majority of the patients being reservists, in whom the quiescent germs of malaria had been called again into activity by the cold and rain. They presented a pitiable spectacle as they lay, cold and shivering, wrapped up in the Government blankets provided by regulation in [illegible] ment. All these cases had to be [illegible] ival at

Frere, and all had more or less lengthy histories of previous attacks of malarial fever; these men had only been in the country a week, and were useless as soldiers for active service. Many of them had to be invalided at once. Venereal disease is another most important factor to take into consideration while estimating the value of men for active service. Needless to state, no case of primary sore or gonorrhœa should be allowed to embark, as even for prophylaxis sake every channel of origin of any infectious disease must be eliminated from the country which troops propose to fight in. During the physical examinations as to fitness this matter will naturally have to be attended to by the medical officer. He should also form some estimate from the man's medical history sheet as to his previous admissions to hospital for venereal disease, and reject all cases of syphilitic cachexia, anæmia, and chronic orchitis, as such cases invariably break down.

Physical examination.—Having glanced over the medical history sheets to estimate the two diseases, malarial fever and venereal disease, and having eliminated entries for any other serious disease, the medical officer can pass on to the physical examination of the man himself. This examination must be as thorough as time will allow. The system the writer has adopted on occasions where he has not had the advantage of the assistance of a brother officer, and where time and the exigencies of the service did not permit of what should, perhaps, have been a more careful examination, was as follows. A company was paraded at a certain hour. The colour-sergeant of the same handed the writer a nominal roll, giving the men's names, numbers, and initials, and also their medical history sheets, arranged in the same order as they appeared on the roll. The men were marched into the room (as large a one as possible is advisable) in batches of ten; each man had nothing on but his shirt and overalls. The men were arranged in file at wide intervals. The front row took off their shirts, and as each man's turn came for examination he let fall his overalls, so that the entire body was seen in turn. Special attention was paid to the detection of discharges from ears, to blepharitis, teeth, heart, rupture, venereal disease, varicocele, varicose veins, deformities of feet, and piles. In examining for rupture each man's abdominal rings were examined, and he was made to stand on tiptoe and cough; and for condylomata and piles to stoop and touch his toes. To avoid personation the company colour-sergeant stood by, and each man was asked either his number, initial, or place of enlistment, or some other question from his medical history sheet; his power of hearing also was estimated by this question.

The degree of any of the above-mentioned defects that can be passed must lie with the individual discretion of the examining medical officer. No case of perforation of the membrana tympani ought to be sent on service; cold and exposure only aggravate it, and its danger to life will be increased. This disease is particularly common amongst the Royal Artillery, and especially the Royal Garrison Artillery; in the Royal Artillery it is usually caused by duty; in other branches of the service it is usually the result of carelessness in drying the ears after a plunge-bath or washing.

Blepharitis is an eye trouble very prone to increase and lead to conjunctivitis on service, especially in dusty or sandy tropics; if this disease is at all markedly present, or if there is absence of many eyelashes, such a soldier ought not to be allowed to go on service. The question of teeth is a more difficult one, and when on service really depends on the keenness of the individual for soldiering, for the writer has seen men in a campaign get along in perfect health with a most limited supply of teeth, and others readily go sick on the smallest excuse and proclaim their inability to eat field rations. As a rule, no man without a good bite of at least four opposing molars should be passed, and all signs of caries with suppurating fangs ought to be rejected. Too much weight need not be attached to carious incisors. The question of artificial teeth is doubtful, and the writer would be disinclined to reject a candidate if otherwise satisfactory; but we must always be suspicious of the worth of such individuals, as they have only to lose their plates to claim exemption from all duties. Non-commissioned officers, as a rule, should be passed at a lower standard as regards teeth than privates. Each and every candidate with any form of cardiac murmur must naturally be rejected at once, and the same rule will hold good in organic disease of the lungs or other viscera.

Venereal disease has already been dealt with and the rules laid down should be rigidly enforced. No case of rupture, however slight, should be passed, as the tendency to increase is always present. Rupture cases wearing trusses should also be rejected, as carrying stones for entrenchments will bring on a relapse. Mild cases of varicocele and varicose veins cannot be stopped, as such a large proportion of men have them; cases of piles, on the other hand, should not be allowed on service, as the condition will never tend to improve but rather to get worse. With regard to feet troubles, no marked cases of bunion, hammer-toe, or flat-foot should be passed, as marching is of cardinal importance, and if men have any excuse in the shape of deformity of toes they will continually fall out on the march and fill the ambulance wagons.

F[illegible] 1. I[illegible] in[illegible] individually as to fitness for field service, and that this examination be carried out in a most thorough fashion. In the Boer war many were sent out who were utterly unfit for war service. 2. The medical officer in charge of a unit in peace time and no other should invariably be detailed to accompany it in war; he will thus know the health of its officers and men, and such experience is invaluable. 3. On mobilisation the bandsmen of the regiment should be handed over entire to the medical officer for special training in first aid and sanitation.

(To be continued.)

CHOLERA, PLAGUE, AND OTHER DISEASES IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

[illegible]

[illegible] those furnished in [illegible] 259):—

Between June 14th and June 20th	...	664	cases,	234	deaths.
"	" 20th " " 27th	...	880	"	365	"
"	" 28th " July 4th	...	1130	"	461	"
"	July 5th " " 11th	...	858	"	384	"

(All the dates are according to the Old Style)

In the first of these four weeks the disease was confined to the towns of St. Petersburg and Riga and the governments of St. Petersburg, Archangel, and Novgorod. In the second there were added to these the governments of Vologda, Pskof, Yaroslavl, Riazan, and Olonetz. In the third, in addition to most of the governments already mentioned, cholera had appeared in those of Vilna, Courland, Livonia, Moscow, Viatka, Vitebsk, Simbirsk, and Finland. Finally, in the fourth week, the names of three governments—those of Estland, Tver, and Kostroma—and the town of Cronstadt appear for the first time in the list. By far the larger part of the totals in each week refers to the outbreak in St. Petersburg. Elsewhere only the governments of Archangel, [illegible] and Riazan have furnished a number of [illegible] *In many of* [illegible] ngle isolated [illegible] een. It will [illegible] the numbers have begun to decrease; but it would, perhaps, be premature to conclude from that that the worst of the epidemic is over. We have only now reached the season in which, in each of the last two years, the cholera epidemic in Russia has begun its ravages. The infection may yet spread to the valley of the Volga and the south of Russia, in which event considerably higher totals than those above quoted may be expected to figure in the weekly returns. [illegible] St. Petersburg [illegible] in large numbers of cholera vibrios in the water of the Neva. A Commission has been appointed by the Russian Government to deal with the question of the St. Petersburg water-supply and drainage schemes. The composition of this

Commission will be as follows: a President, appointed by the Tsar; a certain number of members, appointed by the Senate; six members named for three years by the St. Petersburg town council; two members chosen for the same period by the *zemstvo* of the St Petersburg government; and not more than four members named by the Tsar. The example of England is quoted where the cholera outbreaks that occurred between 1846 and 1860 led to the inauguration of those great public health measures and legislation which have produced such brilliant results in the last few decades of the nineteenth century.

The execution of the new scheme of water-supply in the Russian capital will require some 15 years for its completion. In the meantime, in order to deal with the existing outbreak of cholera, "first aid" stations have been opened in 17 different parts of the city; 42 disinfecting stations have also been established, of which 30 are situated in the central part of the town and 12 on the river. At each of these stations there is a medical officer, a disinfector, and a number of subordinate employés. In order to ensure an effective result not more than six separate operations of disinfection are permitted at each station in the course of 12 hours.

Cholera Cases in Germany and Austria-Hungary.

A single case of cholera occurred in Konigsberg on July 20th. The patient had arrived from Russia. Death occurred on the following day. The diagnosis of cholera was confirmed by bacteriological examination. News has also been received of a suspicious case of the disease at Lemberg, in Galicia, but details are wanting.

Plague in Adalia.

The first case here occurred (as stated in my last letter) on July 2nd. On the 12th another case was reported; the patient was a little girl, aged eight years, living in the Djami Atik quarter of the town; she apparently recovered. On July 19th, in the Yaniklik quarter, a third case was seen; the patient was a shoemaker, aged 16 years; he had been ill for four days; he died on the 23rd. Then on the 29th news was received of the following incident. An inhabitant of Adalia, a man, aged 35 years, left the town on the 27th, intending to drive to a place called Stanos, 60 kilometres from Adalia. He had been ill for some days before he started. After driving some 50 kilometres he died on the road. The municipal doctor, who happened to be in the neighbourhood, examined the body and pronounced that death was due to bubonic plague. On July 28th yet another case had been seen in Adalia itself; the patient was a boy, aged 14 years; he died on the 30th. There have thus been up to the present five cases of plague, with three deaths, in or near Adalia.

Cerebro spinal Meningitis in Arabia.

Within the last year or two epidemic cerebro-spinal meningitis has been showing unusual activity in many parts of the world. News has recently been received here of its appearance, in apparently a very fatal form, in a quite unexpected and little known country. Owing to the presence of plague in endemic form in the Assyr province of Arabia (situated between the Hedjaz on the north and the Yemen on the south) a sanitary officer in the service of the Constaninople Board of Health is permanently stationed at Ep-ha in that provincs. In June this official was requested by the Vali of Assyr to visit certain villages in the neighbourhood of Mihail, in the interior of the province, and report upon a very fatal outbreak of disease which had appeared there. In the first villages visited (those of Ma'ash, El-Daris, Mansab, Al-Fahma, and Ennus'b) no cases were seen, but in each there had been a heavy mortality from a disease which had in most instances caused death in 24 hours, or at most in a few days. The cemeteries showed, by the number of new graves, how high the mortality had been. In the next district visited, that of Al-Mohsin, nothing was seen but two cases of typhoid fever. Further travel in these regions was not without danger, but with the aid of Sheikh Faiz-bin-Nouh, a sheikh much venerated in those regions, it became possible to visit several villages in the districts of El-Hadjif and Tayal-Marwa. Here, in each village "and almost in every hut," patients were found, suffering from an acute disease which is said to have resembled in every way the epidemic form of cerebro-spinal meningitis. There were in each case high fever, accompanied with vomiting, excruciating headache and backache, contracture of the limbs, delirium, torpor, coma, and then death after a day's illness. The strongest and healthiest individuals did not escape; they were suddenly struck down (writes the author of this excellent report), crying, "Oh! my head!" or "Oh! my back! I have been shot in the back." The disease had apparently spread slowly in each village, and from one village to another. The district first affected had been that of Al-Fahma, then that of Al-Mohsin, and then that of Al-Hadjif. Although the population is extremely sparse—less than one person per square kilometre—the epidemic is said to have been "*une des plus terribles et ravageantes,*" as shown by the new graves in all the cemeteries. While still in these regions news was received of the appearance of the disease in the Al-Machwal district, and on visiting the villages in this district several of the first cases were seen; the symptoms were identical with those already described. It is noteworthy that both here and in the earlier villages visited an epidemic of enteric fever was prevalent at the same time as that of cerebro-spinal meningitis. Nothing was seen or heard of the prevalence of plague in any of the villages visited; but the tour did not extend to the country of the Beni Sheir, where the centres of endemic plague exist (or used to exist). That tribe or group of tribes was in active rebellion against the governing authorities, and it was impossible, without great risk, to penetrate to their settlements.

Constantinople, August 6th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University of Bristol.

THE appointment of Dr. J. Michell Clarke to be the first Pro-Vice-Chancellor of the University of Bristol, which was briefly announced in my last letter, [illegible] than was possible at that time. The [illegible] proud of the honour done to on[illegible] generally agreed that the office could not be better filled. Dr. Michell Clarke has given an immense amount of time and pains during the past 25 years to the establishment and expansion of medical teaching in Bristol. He has taught medicine in the wards of the General Hospital for many years, and lately as professor of medicine at University College; and until it was found possible to appoint a whole-time professor of pathology, he held this office and taught pathology with conspicuous success. Prior to this he was lecturer on practical physiology, so that he has a very complete personal experience of the medical curriculum. Beyond this, he has taken a leading part in the heavy work of administration which has been necessary during the evolution of the University.—Lord Rosebery, as Chancellor of the University of London, has appointed Sir Arthur W. Rucker, M.A., D.Sc., LL.D., F.R S., to be his representative on the Court of the University of Bristol for a period of seven years.—The education committee of the Bristol city council has had a surprise in the shape of an application from the authorities of the University for the payment of the sum voted by the council several months ago This sum is about £7000, the proceeds of a penny rate, £3000 of which are earmarked for a scheme of scholarships, £4000 remaining for the general mainten[illegible] application was not expected yet, but the [illegible] rapid in its final stages, and the [illegible] Oct 1st. It is not likely that all [illegible] en shape sufficiently for use by [illegible] complete will presumably come [illegible] circumstances the education committee agrees to provide £2000 (half the general fund) in December, the special £3000 [illegible] waiting till the scholarship scheme is ready.

Bristol Royal Infirmary.

At the half-yearly meeting of the governors of the infirmary held on July 27th, Sir George White, the President, gave a brief account of the financial position during the first half of 1909. Comparing the figures with the same half of 1908, the total receipts were £8142, as against £8420 the preceding year; the ordinary expenditure was £8578, compared with £8457. Extraordinary expenditure to the extent of £948 was incurred in the starting of the nurses' training school and other items, leaving a balance due to treasurer of £1384. This makes an adverse balance of nearly £5000 accumulated during the last three years. Mr. Francis Tagart and Mr. Samuel White have each promised £1000 towards the extinction of this debt, and other promises amounting to £457 have also been received. The most hopeful feature of the financial outlook is the increase by £217 of the st [illegible] egacies were productive [illegible] White concluded with a [illegible] equate support, a statement of the work of the institution during the past half-year (1781 in-patients and 20,587 out-patients, as compared with 1747 and 20,227 in the corresponding half of 1908), and a brief reference to the building scheme. This has progressed as far as the demolition of the houses which occupied the *site to be devoted to the projected new* premises, the detailed specifications for which are being prepared. Building tenders will be asked for in a few months. After the general meeting a special meeting was held to elect Mr. G. Munro Smith consulting surgeon on [illegible] replied. Mr. H. F. Mole, who has for some years been assistant surgeon, was elected to the full staff, and Mr. C. F. Walters, surgical registrar to the infirmary, was elected assistant surgeon.

Death of Mr. Edward Benjamin Steele-Perkins, L.S.A. Lond.

Mr. E. B. Steele-Perkins, who died at his residence, Wilton-place, Exeter, on July 30th, in his sixty-eighth year, was a member of an old Exeter family. He received his medical education at Charing Cross Hospital, and after qualifying in 1876 joined his father in practice at Exeter. For nearly 40 years he was a familiar figure in that city, and his geniality won him many friends. He was keenly interested in the Volunteer movement and for many years held a captaincy in the 1st Devon Artillery Volunteers, retiring about ten years ago with the honorary rank of major. His father, the late Dr. John Steele-Perkins, was one of the earlies [illegible] Mr. Steele-Perkins had a large [illegible] s honorary surgeon to the Devon [illegible] Refuge, and also medical examiner for the Royal Navy and Royal Marines. He was a "freeman" of the city of Exeter, for many years represented St. Sidwell's ward in the city council, and was held in high respect. He leaves a widow and two daughters.

Public Health in Honiton District.

At a recent meeting of the Honiton (Devon) rural district council a letter was read from Mr. F. R. S. Cosens, the secretary of the Honiton and Axminster Unions Medical Association, stating that at a meeting of the medical men of the Honiton and Axminster unions a resolution was passed urging the provision of an isolation hospital for the Honiton [illegible] urban, Ottery St. Mary urban, and [illegible] the appoint[illegible] who should [illegible] vote all his time to public health work.

The Pearn Convalescent Home, near Plymouth.

The annual meeting of the subscribers of this institution was held recently under the Presidency of Vice-Admiral J. E. Maitland Wilson. The medical report stated that during 1908 the patients admitted numbered 496, compared with 491 in 1907. 307 patients were admitted from the South Devon and East Cornwall Hospital, 172 from the Royal Albert Hospital, Devonport, and 17 from the Plymouth Eye Infirmary. 61 nurses from these hospitals were also received during the year. The expenditure for the year was £1123, the average cost of each patient being *2s. 6d.* per day.

The Totnes Cottage Hospital.

At the annual meeting of the subscribers of the Totnes (Devon) Cottage Hospital the following members of the honorary medical staff, whose term of office had expired, were re-elected: Dr. K. R. Smith, Dr. G. J. Gibson, Dr. W. R. Edmond, Dr. W. Chapman, and Mr. H. S. Johnson.

The Tour of the "E. M. I."

The party of foreign medical men who have been touring England under the auspices of the "Enseignement Médico-Mutuel Internationale" arrived at Bristol on August 15th under the guidance of Dr. Etienne Bazot of Paris. They visited the Royal Infirmary and were conducted through that institution by members of the honorary staff. They then drove on to the General Hospital where they were received by the president, Mr. J. Storrs [illegible] members of the visiting staff. [illegible] institution and expressed their [illegible] operating theatres, and the nurs [illegible] Royal Hotel, to which represen [illegible] invited, they made a tour of Clifton which included the Zoological Gardens, and were finally entertained at the houses of several medical men who had conducted them over the institutions in the morning.

August 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Infant Visitation in Glasgow.

UNDER the scheme of visitation of the Public Health [illegible] ector calls at every house [illegible] er this arrangement 12,954 [illegible] male inspectors during the [illegible] proved to be duplicates of [illegible] ere not visited for various [illegible] given, while 737 more [illegible] no less than 96 per cent had [illegible] in the early weeks of life. [illegible] been given by the Glasgow Infant Health Visitors' Association. Of this association there are now 15 different branches supplying voluntary visitors to the number of 300, who undertake visitation in 19 wards or districts of wards. While the visitors are untrained in public health work, and no standard of training can be insisted on beyond a familiarity with the requirements of district visitation, there is every reason to believe that the influence of an educated and sympathetic visitor cannot fail to operate for good in the homes of the poor. Information regarding the cases to be visited is sent by the health office to the secretaries of the various branches of the association, [illegible] turning reports to the [illegible] The cards forwarded [illegible] nsist of a yellow card which is [illegible] card which is f [illegible] cards may be ret [illegible] st the visitors as [illegible] y are only for [illegible] health office wher [illegible] The complete r [illegible] yellow card and [illegible] to the health office immediately the baby has completed his twelfth month.

Greenock and Phthisis Cases.

In a report to the Greenock corporation the medical officer of health for the burgh states that even 12 beds in the Combination Hospital would enable the health authorities to institute *a definite campaign against phthisis*. The cost is estimated at £620. It is proposed to establish a dispensary, the upkeep of which would probably not exceed £100 per annum.

Large Donation to Dundee Royal Infirmary.

At a meeting of the directors of the Dundee Royal Infirmary held on August 12th Mr. George Duncan, one of the directors, read a letter from Miss Duncan of Drumforte, intimating a donation of £4200 to the funds of the infirmary for the purpose of endowing two beds in memory of, and to be named after, Miss Duncan's late brothers, Mr. James Duncan of Drumforte and Indanstone, and Mr. George Duncan, banker, Alyth; and two cots in the children's ward, one to be named after her late sister, Miss Marjory Duncan, and the other to be named after herself, preference to be given to patients from Alyth and Blackwater districts. On the m [illegible] chairman, the directors resolved to record their [illegible] a time [illegible] since its inception not a single case it has undertaken to defend has been lost, and the finances have been administered so faithfully that to-day there are several thousand dollars to the good of the society.—Another important meeting also will be the meeting of the Milk Commission of the Canadian Medical Association. During the past year this Commission has done a great deal of work, not all of an educative character. It is now proposed to form subcommittees in all the places of importance in Canada and to push along the campaign for clean milk. The Commission also advocates the pasteurisation of clean milk, and the success it is attaining is seen in the fact that the Hospital for Sick Children, Toronto, is establishing a pasteurisation plant, and two large dairies are adopting a similar course.

A French Decoration for a Surgeon of Montreal.

Dr. J. N. Roy, Montreal, has recently received from the French Government the Order of the Dragon de l'Annam. This decoration, which has not been previously conferred on any Canadian, is largely bestowed for military service. Some four years ago Dr. Roy, while making a trip round the world and being in Chinese waters, acted as emergency surgeon to a French warship which had been wrecked through an explosion. He attended for some days to about 20 injured sailors and accompanied them to Tonking where they were placed in the military hospital.

New Brunswick Medical Association.

The annual meeting of the New Brunswick Medical Association was held in St. John, N.B., on July 20th and 21st, under the presidency of Dr. J. R. McIntosh. Dr. S. Skinner, of St. John, in presenting a paper on Public Health, regretted that St. John had no medical inspection of schools. He also spoke of the dust in the streets and street noises, which he claimed were a menace to the health of the people. The report of the registrar of the society referred to the recent attempt to have the medical law of the province amended, but owing to strong opposition this had to be abandoned. Steps had been taken recently to establish the five-year curriculum in New Brunswick and so bring that province into line with the other provinces of the Dominion in this respect. It was decided to meet in St. John again next year as the Maritime Medical Association will meet there then; and the Canadian Medical Association will also be invited to meet in 1910 there, as the national medical body has not met in St. John since 1894. The following officers were elected: President, Dr. H. A. Murray, Fredericton Junction; first vice-president, Dr. O. T. Purdy, Moncton; second vice-president, Dr. G. G. Melvin, St. John; treasurer, Dr. D. E. Berryman, St. John; corresponding secretary, Dr. J. S. Bentley, St. John; and recording secretary, Dr. G. G. Corbet, St. John.

Maritime Medical Association.

The annual meeting of the Maritime Medical Association met in Charlottetown, P.E.I., on July 15th and 16th. A communication was read from the general secretary of the Canadian Medical Association concerning the affiliation of the maritime medical societies with the national medical body. No action was taken in the matter at that meeting. Another matter of interest brought up was the subject of reciprocal registration with Great Britain. This was introduced by a communication from the British Medical Association, which called attention to the fact that the five-year [illegible]e adopted to secure reciprocal [illegible]ral Medical Council of Great [illegible] was also submitted advocating [illegible] amongst the provinces of the [illegible] was referred to a committee of three. Dr. F. Montizambert, the Director-General of Public Health in Canada, was present and delivered an address on tuberculosis He believed that greater good could be accomplished by house visitation by nurses than by sanatoriums. Dr. Black, M.P., Windsor, N.S., advocated a bureau of health for Canada. An address was also delivered by Lieutenant-Colonel Carleton Jones, M.D., Director-General of the Canadian Army Medical Services, who referred to the laboratory being established by the Canadian Department of Militia in connexion with the Army Medical Corps. The following officers were elected for next year:—President: Dr. W. A. Ferguson, Moncton, N.B. Vice-Presidents: Dr. J. G. Macdonald, Amherst, N.S.; Dr. A. G. Ferguson, Dalhousie; and Dr. A. A. MacLellan, Summerside, P.E.I. Treasurer: Dr. D. D. Corbet, St. John, N.B. Secretary: Dr. G. G. Melvin, St. John.

Ontario Medical Council.

One of the most important subjects discussed at the annual meeting of the Ontario Medical Council in Toronto in July was that of restricting the practice of the osteopaths. In British Columbia, a campaign is being waged against the osteopaths and they have been given until September to go out of business. As a consequence, several have already left Vancouver and Victoria for American cities. One of the clauses in the report of the [illegible] Ontario Medical Council advised [illegible] be taken against these self-same [illegible] have been thriving all too plentifully in Toronto and other Ontario cities. The solicitor to the Medical Council has given his opinion that the osteopaths are carrying on business in contravention of the Ontario Medical Act. The matter was placed in the hands of the executive and action may be expected at any time. The Council also took up the question of reciprocity with the province of Manitoba and other Western Provinces. As a result, two special delegates were appointed by the Council from amongst its members to proceed to the annual meeting of the Canadian Medical Association at Winnipeg on August 23rd, 24th, and 25th, to confer with representatives from the Western Provinces. The question of reciprocity with Great Britain was mentioned, but the committee in charge asked that further time be given them to prepare a report. Reciprocity was also discussed with the State of Michigan, U.S.A., but the Council was of the opinion that the time was not opportune for any such measure. A long and at times animated discussion took place on what action the Council should take on criminal cases, several medical men having been before the law courts recently in connexion with abortion cases. Whilst the feeling ran strongly to prompt action in the way of removal from the Register, it was thought best to proceed with all due caution until the courts had established the guilt of such parties. Dr. E. P. Hardy (Toronto) was elected President and Dr. John L. Bray (Toronto) was re-elected registrar.

The Toronto General Hospital and the University of Toronto.

The *Canadian Practitioner and Review* for August, in an editorial article on this subject, says that by a recent agreement arrived at by the governors of the University and the board of trustees of the hospital the University will secure the south-west portion of the new hospital site for medical buildings, and for this privilege will make an annual grant of about $15,000 to the hospital for 40 years. By this arrangement the chief professors of medicine and surgery will be heads of services in the hospital and also heads of its special departments. Four members of the board of governors and four members of the board of trustees of the hospital will act as a joint committee to make recommendations for other appointments. Ground is now being prepared for the erection of the new Toronto General Hospital which is to cost about $2,200,000. The amount of subscriptions received at present is $1,200,000. The old hospital property will produce $300,000, and the recent agreement between the two institutions will be security for at least another $300,000. The new hospital will probably accommodate 500 patients—about 50 more than the present institution; and there is a feeling amongst some medical men that the old building should be still used for hospital purposes to accommodate the growing needs of the eastern portion of the city.

Toronto, August 3rd.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Lymphangioplasty for Elephantiasis.

AT a recent meeting of the Burma branch of the British Medical Association an interesting case was shown, the patient being an Indian, aged 35 years, belonging to the military lines, who was recently operated on for elephantiasis of the right leg, from which he had been suffering for the past few years, the operator being Major E. R. Rost, I.M.S., civil surgeon, Civil General Hospital, Rangoon. So far the results of the operation seem very satisfactory. The whole operation did not take over 20 minutes and the patient experienced no distressing symptoms. The operation consisted of the introduction of several silk ligatures into the subcutaneous tissue of the diseased foot, which ligatures were carried up the leg and inserted into the muscles higher up. They [illegible] pass owing to the block [illegible] ligatures by capillary a[illegible] n days after the operati[illegible] ie leg, which previously [illegible] thickness of the left leg, has been almost reduced to its normal state. [illegible] is due to Mr. Sampson [illegible] or the relief of "brawny [illegible] g in the Cancer Research [illegible] al, as he recorded in THE LANCET, Vol. I., 1908, p. 784. He subsequently [illegible] encouraging to report a confi[illegible] from a country in which elephantiasis is so rife as in India.

Plague.

[illegible] week ending July 3rd show 478 [illegible] the week preceding. Bombay [illegible] lras 41, Bengal 60, the United Provinces 80, the Punjab 71, Burma 86, and Mysore State 60.

The Health of the Jails.

[illegible] y apparent in this [illegible] ement of jails in [illegible] sions to the jails [illegible] per cent. higher [illegible] verage number of [illegible] er. The increase in admissions was particularly marked in certain of the districts that suffered severely from famine—Bahraich, Sitapur, and Gonda, and also in Hardoi. These districts also sustained the depredations of gangs of dacoits who were driven to crime by the famine. The death-rate of the jails was 60 [illegible] result direc[illegible] prisoners. [illegible] to jail has [illegible] being shown for this fact.

A Vaccine for Dysentery.

In the [illegible] Association it is mentioned [illegible] the Indian Medical Service h[illegible] with regard to a vaccine w[illegible] nsiderable value in the treatment of dysentery. The vaccine is the preparation of an officer of the Indian Medical Service, but is not availabl[illegible] districts. In a letter of June [illegible] with the Government o[illegible] has been referred, stated that pending the completion of a special inquiry into the etiology of dysentery in India now in progress at the Central Research Institute it was not considered advisable to issue dysentery vaccine.

Infant Mortality in Burma.

Are a hot, dry climate and low rainfall the natural conditions most prejudicial to infant life? This is a problem propounded by Major Williams, I.M.S., the Sanitary Commissioner of Burma, in his annual report. The death-rate of infants under 12 months for Burma in 1908 was 208·96 per 1000, and it appears that the more northerly the situation of the town, and consequently the drier and hotter the climate, the higher the death-rate. Another instance which Major Williams observes as producing an obviously deleterious result on infant life is the congestion of population and buildings in confined quarters in towns. The Lieutenant-Governor of Burma is, however, sceptical of the Sanitary Commissioner's conclusions. It is notorious that there are probably no people which exhibit greater fondness for children than the Burmans, a[illegible] believes that a great deal of t[illegible] proper feeding through ignoranc[illegible] are at present in a shockingly [illegible] their notions of hygiene, and it is [illegible] they cannot look after their you[illegible] their very insanitary customs. Meanwhile, every effort is being made to cultivate in the Burmans some of the fundamentals of sanitary knowledge, and it seems to be a good sign that measures which have been taken on these lines for the benefit of the rising generation in the Burmese schools have been successful.

The Accommodation for Soldiers' Families in the Hills.

The severe sickness that followed last year's rains through the length and breadth of Upper India has made the demand for hill accommodation for soldiers' families this year very considerable. There are always a large number of soldiers' wives who prefer the heat in the company of their husbands to the long and often dreary separation of a move to the hills. Soldiers and non-commissioned officers, too, often find that the cost of a home in the hills as well as in the plains is a very severe strain on their resources. This year, however, so great has been the demand for hill accommodation that there has been much difficulty in meeting it. The accommodation provided, considerable though it is, has never been adequate, and it has to be supplemented with tents. Not unnaturally soldiers' wives have a great antipathy to tents in the hills. They do not like the cold of the first weeks, when their blanket equipment is often inadequate, and they find the rains very wretched. The class of servants and odd natives that frequent such camps are notoriously bad, and thefts in tents are a constant source of complaint. It would seem to be very desirable that the amount of hut accommodation for families in the hills should be augmented, so that the major portion of the families might be saved from the dreary heat of the plains. The families of the rank and file are of a far superior class than in years gone by, and it is to the advantage of the army that they should be well accommodated, while it is distinctly to the advantage of India that the children should be reared in health-giving surroundings and given a fair chance to grow up as useful members of the community.

August 13th.

Obituary.

THEODORE DAVIS, M.D. LOND., F.R.C.S. ENG.,

CONSULTING SURGEON, CLEVEDON (SOMERSET) DISPENSARY AND CLEVEDON COTTAGE HOSPITAL.

Dr. Theodore Davis, one of the best-known and highly respected medical practitioners of Clevedon and the neighbourhood, died at his residence, Walton-in-Gordano, Clevedon, on August 11th, in his seventy-sixth year. He was the son of the late Dr. J. Davis of Clevedon, and received his medical education at Queen's College, Birmingham, and St. Bartholomew's Hospital, London. He obtained the F.R.C.S. Eng. in 1859, and two years later took his London doctorate. Dr. Davis shortly afterwards commenced practice at Clevedon, where he soon obtained an honourable reputation and a leading position in the district, and was often sought in consultation by his professional brethren. Dr. Davis was on the honorary staff of the local hospital and also of the dispensary. He had retired from active work for some years owing to failing health. Dr. Davis will be [illegible] is felt there fo[illegible] took place at [illegible] largely attended.

EDWARD MORRIS, M.R.C.S. ENG., L.S.A.

Mr. E. Morris, who died at his residence, 5, Caprera-terrace, North-road, Plymouth, on August 10th, from heart failure, was a veteran of the medical profession, for he was born on March 15th, 1827, at Devonport. He was educated at the Plymouth Grammar [illegible] to Mr. J. Whipple, surgeo[illegible] mew's Hospital, taking th[illegible] tion in 1854 and 1856 respectively. Shortly after qualifying [illegible] Mr. Morris was for many years medical emigration officer under the Board of Trade. He occupied a prominent position in the "Three Towns," where he had an extensive practice and a considerable reputation. Mr. Morris never married.

For, some years he had retired from all active work, and for the past three years had suffered from cardiac disease. The funeral took place on August 13th and was very largely attended by many anxious to show respect for an old friend who had died full of years and honour.

Medical News.

UNIVERSITY OF LONDON.—At examinations for internal and external students held in July the following candidates were successful:—

FIRST EXAMINATION FOR MEDICAL DEGREES.

Douglas Reid Alexander, Epsom College; ‡Elizabeth Labrey Ashby, University of Birmingham; Frank Montague Barnes, St. Thomas's Hospital; Irene Bastow, London (Royal Free Hospital) School of Medicine for Women; William Roy Blore, The Leys, Cambridge; ‡John Bostock, London Hospital; †Gerald Kessick Bowes, Epsom College; Alice Dorothea Brooks, London (Royal Free Hospital) School of Medicine for Women; Frederick Charles Sedgwick Broome, Guy's Hospital; Owen Deane Brownfield, Epsom College; Isabel Florence Buckle, London (Royal Free Hospital) School of Medicine for Women; William Burt, St. Thomas's Hospital; Frederick Wyndham Chamberlain, Middlesex Hospital; Harold Garrett Chaplin, St. Thomas's Hospital; John Eric Cheesman, [illegible] Harold Aylmer De Morgan, [illegible] O. Doorly, St. Thomas's [illegible] 's School; Ahmed Fahmi [illegible] University of Birmingham; [illegible] Hospital; Hugh James Orr, [illegible] rles Hamilton Gould, Guy's [illegible] sity College, Cardiff; *Mary Esther Harding, London (Royal Free Hospital) School of Medicine for Women; John Richard Harris and †Claude Charles Harrison, [illegible] Horace William Hay, University [illegible] tchings, Guy's Hospital; Alec George [illegible] †Henry Julyan Hoyte, University [illegible] Hospital; Iorwerth Hubert [illegible] College and private study; [illegible] Technical Schools; *Norman [illegible] St. Thomas's Hospital; William Francis MacAlevey, University of Birmingham; Jivraj Narayan Mehta, Grant Medical College, Bombay, and University Tutorial College; James York Moore, Guy's Hospital; Arthur Daniel Morris, University College, Cardiff; Purushottam Tulsibhai Patel, Grant Medical College, Bombay, and University Tutorial College; Thomas Bond Paul, Middlesex Hospital; Innes Hope Pearse, London (Royal Free Hospital) School of Medicine for Women; Julian Lionel Priston, London Hospital; Charles Edgecumbe Procter, Epsom College; Frederick Tavinor Rees, University College, Cardiff; †Robert Edward Roberts, University of Liverpool; James Albert Robinson and William Eric Roper Saunders, St. Bartholomew's Hospital; Henry Richard Sheppard, Brighton Municipal Technical College; Reginald Hugh Simpson, Epsom College, John Smith Sloper, St. Thomas's Hospital; †Edward Seguier Sowerby, University College, Bristol; Clifford William Sparks, St. Thomas's Hospital; John Eric Stacey, University of Sheffield; Grace Stapleton, London (Royal Free Hospital) School of Medicine for Women; John Stephenson, Alleyn's School, Dulwich; William Edmund Taylor, University College, Bristol; Naomi Tribe, London (Royal Free Hospital) School of Medicine for Women; Henry Parks Whitworth, Guy's Hospital; Gerald Richard Courtenay Wilson, St. Thomas's Hospital; Arthur Graham Winter, London Hospital; and Herbert Gregory Winter, Epsom College.

* Awarded a mark of distinction in organic chemistry.
† Awarded a mark of distinction in physics.
‡ Awarded a mark of distinction in general biology.

The following students who took a portion of the examination under Old Regulations have now completed it:—

William Claude Percy [illegible] ge; Thomas David Collis Barry, private [illegible] Bevan-Brown, Guy's Hospital; Ursula Po [illegible] Royal Free Hospital) School of Medicine f [illegible] Ying-Jue Oieh, King [illegible] College, Cardiff; Dora Challis Colebrook, Lo [illegible] pital) School of Medicine for Women; [illegible] Cooper and Stephen Andrew Cornelius, University College; John Kenyon Davies, University College, Cardiff; Charles Frederick Hacker, University College and Nort [illegible] tute; Stanley Sextus B. Harrison, Guy's [illegible] gdon, King's College; Reginald Walter [illegible] llege, Cardiff; Desmond Manus MacMan [illegible] ladys Matthews, Ladies' College, Cheltenha [illegible] rivate study; John Ernest Pearce, Brigh [illegible] and private study; Stanley Hugh Robinson, Guy's Hospital; Gordon Wilfrid R. Rudkin and Eric Arnold Scott, University College; Gerald Davenant Shann and Maurice Ulick Wilson, King's College; and Siong Yew Wong, St. Thomas's Hospital.

The following students who took a portion of the examination under Old Regulations have now qualified as follows:—

Inorganic Chemistry.—John Prichard Bracken (*p*), University College; and John Alexander Pridham (*p*), Weymouth College.
Physics.—Ernest James Coombe (*c*), King's College; and Frank Bramshaw Gilhespy (*b*), University College.
Gen [illegible] Margaret Burns (*c*), London (Royal Fr [illegible] icine for Women.

p. This candidate had already passed in experimental physics.
c. This candidate had already passed in inorganic chemistry.
b. This candidate had already passed in biology.

SECOND EXAMINATION FOR MEDICAL DEGREES.

Part I.—Basil William Armstrong, St. Mary's Hospital; John Rawlings Barrow-Clough, Guy's Hospital; Robert Maitland Beath, Queen's College, Belfast; Kenneth Biggs, London Hospital; Percy Butler, University College; George Maclean Campbell and Alice [illegible] llege, Bristol; John Archer Cowan, [illegible] Joseph Cronin, London Hospital; [illegible] Thomas's Hospital; Hector Wynne Davies, University College; Henrietta Frances Davies, London (Royal Free Hospital) School of Medicine for Women; John Yerbury Dent, King's College; George Dunluce Eccles, Guy's Hospital; Herbert Thomas F [illegible] Walter Stuart I [illegible] London Hospital; [illegible] Foley, St. Thomas's Hospital; Katherine Mary Lovell Gamgee, University College; Georg Arnold Gassmann, London Hospital; Edward Alexander Marie J. Goldie, University College; Una Griffin, London (Royal Free Hospital) School of Medicine for Women; Robert Lister Horton, University College; Richard Orthin Hilton Jones, University of Liverpool and private study; Mildred Archer Jukes, London (Royal Free Hospital) School of Medicine for Women; Rustam Merwan Kharegat, University College; William Joseph Teil Kimber, St. Thomas's Hospital; Eric Pierpoint Langley, St. Mary's Hospital; Edward Athol C. Langton, St. Bartholomew's Hospital; Constance Leetham, London (Royal Free Hospital) School of Medicine for Women; William Leslie, Charing Cross Hospital; Eric Delafield Lindow, King's College; Muriel Annie Lloyd and Helena Rosa Lowenfold, London (Royal Free Hospital) School of Medicine for Women; Arthur G. Maitland-Jones, London Hospital; Refna Mallet, London (Royal Free Hospital) School of Medicine for Women; Lionel Arthur Martin, University College; George Sefton Miller, Guy's Hospital; Wilfrid Egerton Milligan, St. Thomas's Hospital; Donald Ewart Morley, London Hospital; Edith Mary Nesbitt Moss, University College, Nottingham; Cyril Eaton Petley, Guy's Hospital; John Alexander Poole, St. Bartholomew's Hospital; Edna Mary Powell, London (Royal Free Hospital) School of Medicine for Women; Richard Amyas Preston, University of Leeds and private study; John Beaufoy Randall, St. Bartholomew's Hospital; Winifred Mary Ray, London (Royal Free Hospital) School of Medicine for Women; Leslie Norman Reece, St. Thomas's Hospital; Francis Charles Robbs, St. Mary's Hospital; Cedric Sydney Lane Roberts, Guy's Hospital; George Henry Roberts, St. Thomas's Hospital; Henry Colwell Rook, John Alfred Ryle, Evelyn Dennis Scott, Cyril Sherris, and *Arthur Joseph E. Smith, Guy's Hospital; Harold Edward Smith, University of Sheffield; Margaret Edith Elliott Smith, [illegible] of Medicine for Women; Sidn [illegible] Henry Dakin Smith, Universit [illegible] University of Birmingham [illegible] St. Bartholomew's Hospital; [illegible] of Manchester, Manchester Municipal Technical School and Private Study; James Robert Karran Thomson, London Hospital; Thomas Burdock Vaile, St. Bartholomew's Hospital; Mary Alice Van Ingen, London (Royal Free Hospital) School of Medicine for Women; Herman Crowther [illegible] Liverpool; Ernest Wentworth Wade, [illegible] and Private Study; Alfred Stewart W [illegible] n Richard Menzies Whigham, St. Mary [illegible] Wilkinson and John Douglas Wilkinson, St. Thomas's Hospital; Alfred Wills, Guy's Hospital; Alan Wilson, University College; Oscar Reginald Lewis Wilson, Guy's Hospital; and Arthur Wai-tak Woo, London Hospital.

* Awarded a mark of distinction.

Among the successful candidates in the scholarships examination were the following:—

Physics.—Lewis Simons (Neil [illegible] g's College.
Chemistry.—John Edmund I [illegible] holarship) and Hubert Arthur Harry Howa [illegible]
Botany.—*Gertrude Maria Talbot, University College; and *Elizabeth Mary Thomas, Birkbeck College and South-Western Polytechnic Institute.

* A Gilchrist Scholarship is divided between these two candidates

THE death of another centenarian is reported, Mrs. Jane Allen having died at Scarborough on August 13th in her 101st year.

NORFOLK AND NORWICH HOSPITAL.—On August 14th the Charity Football Cup Competition Committee existing in connexion with this hospital presented the institution with a cheque for £130, making a total of £730 which has been collected through this channel during six years. This amount is contributed chiefly by the working classes and represents the proceeds of the "gate" on the day of the competition for the Charity Cup. Mr. Leathes Prior presented the cheque on behalf of the working men of Norwich.

KENT COUNTY COUNCIL.—A committee of the Kent County Council has recommended the council to pass a resolution to group Queenborough, Sittingbourne, Milton Regis, and Milton Rural under one whole-time medical officer. It has also directed that a letter should be sent to the boards of guardians in the county of Kent on the subject of the payment of fees to medical men summoned by midwives to assist them in difficult cases under the provisions of the Midwives Act, stating that it was desirable for medical men to be paid for such services, as it did not appear that guardians exercised their powers to make these payments (subject to recovery of fees, where possible, from the patient), as frequently as was desirable.

THE BURTON-ON-TRENT INFIRMARY.—The committee of this institution has decided to make some necessary enlargements in the out-patient department for provision of better accommodation for X ray and other work. Plans have been prepared by Mr. H. Beck, the hospital's architect, and a tender of £700 for the improvements has been accepted.

PTOMAINE POISONING AT COLCHESTER.—A disturbing incident occurred at Colchester on August 15th, nearly 70 men in the barracks having been seized with symptoms suggesting ptomaine poisoning after eating a kedgeree of fish and rice. They were admitted to the Garrison Hospital, but they recovered sufficiently to be discharged shortly afterwards.

FATAL PANIC AT A KINEMATOGRAPH EXHIBITION.—On August 14th an unfortunate panic occurred at the Victoria Hall, Southsea, during the progress of a kinematograph performance. The accidental ignition of the film excited sudden alarm, although the fire was extinguished by means immediately available. A woman, however, shouted "Fire," which caused a stampede amongst a number of children in the gallery, and rushing downstairs many of them became jammed in the entrance to the street door, with the result that the 11-year-old son of a workman was killed, and eight others were injured more or less severely. No blame appears to have attached to the management of the exhibition in the precautions taken to prevent the disaster.

PLUMBING CLASSES IN LANCASHIRE.—Sir Henry Hibbert, chairman of the Lancashire education committee, distributed at Preston last week the prizes won by students at the plumbing classes in a special series of examinations in practical work, conducted at the chief educational centres in Lancashire. Sir Henry Hibbert said that, so far as he could gather, Lancashire stood alone at present in regard to these practical tests of workmanship. The reason was that the county education committee attached a high degree of importance to successful craftsmanship in plumbing both from the hygienic and commercial points of view. They had to a very large extent been helped by the Worshipful Company of Plumbers.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Lunacy Returns.

THE annual report of the Commissioners in Lunacy has just been issued as a Parliamentary Blue book. It is stated therein that there were known to be under care on Jan 1st, 1909, in England and Wales 128,787 persons certified as insane The number exceeds by 2703 the number of insane recorded on Jan. 1st, 1908—namely, 126,084. The pauper patients on Jan. 1st, 1909, were 117,377, or 91·1 per cent. of all certified insane. The Commissioners make allusion to the report of the Royal Commission on the Care and Control of the Feeble-minded and express agreement with the suggestion to permit the courts to have the condition of mental defectives inquired into at an earlier stage than is now done.

Metropolitan Ambulances Bill.

The Metropolitan Ambulances Bill has passed through one of the Standing Committees of the House of Commons. This is the measure which Sir WILLIAM COLLINS introduced some time ago to enable the *London County Council* to establish and maintain an ambulance service in London. There has been a difference of opinion as to what authority should undertake this work and this was reflected in the discussion on the Bill Mr. PEEL, who has introduced a Bill to entrust the Metropolitan Asylums Board with the duty, moved the rejection of the first clause which gives to the London County Council power to establish the ambulance service. He quoted the finding of the majority of the recent Departmental Committee in support of his argument that the work should be carried out by the Metropolitan Asylums Board. Sir WILLIAM COLLINS strongly opposed Mr. PEEL's views. He expressed the opinion that the London County Council could carry on the ambulance service much more economically than the Asylums Board In insisting on the need for legislation on the subject, he mentioned that the number of accidents on the *streets of London* was going up by leaps and bounds. Whereas in 1905 they amounted to 10,260, in 1906 they reached 12,237, and last year they totalled 14,323. Mr. GLADSTONE, the Home Secretary, gave his support to the proposals of the Bill of Sir WILLIAM COLLINS, but he emphasised the fact that he did not commit the Government to it. He stated that he had given the whole question careful consideration, and had come to the conclusion that the London County Council as a rating authority was the best body to which to entrust the administration of the ambulances. The right honourable gentleman asked the Committee not to delay the Bill as legislation was urgent. Before the division was taken Sir WILLIAM COLLINS stated that several well-known philanthropists had expressed the intention of offering electric motor ambulances for the service. Clause I. was ultimately carried by 28 votes to 1. On the motion of Mr. GLADSTONE, the following new clause was inserted in the Bill:—"The London County Council may allow the ambulance service established under this Act to be used, on such terms and conditions as may be agreed upon, by any local authority having powers under section fifty of the Public Health Acts Amendment Act, 1907." The Bill as amended was ordered to be reported to the House.

Glasgow Hospital for Skin Diseases.

The Glasgow Hospital for Skin Diseases Confirmation Order Bill has passed through all its stages in both Houses of Parliament and has received the Royal Assent.

The Midwives Act.

The report of the Departmental Committee appointed by the Lord President of the Council to consider the working of the Midwives Act, 1902, has been presented to Parliament.

Asylum Officers' Superannuation.

A special report has been brought forward by the Select Committee of the House of Commons on the Asylum Officers' Superannuation Bill. The Committee has found that even before it entered upon its inquiry there was a considerable accumulation both of precedent and authority in favour of the principle that a system of substantial superannuation allowances for meritorious service in public asylums, certain in its operation and contributory in its method, was desirable, just, and expedient. The Committee has come to a strong and unanimous opinion that legislative effect should forthwith be given to this principle. It has further endeavoured to amend the Bill introduced by Sir W. COLLINS to deal with the superannuation of asylum officers in such a way as to apply to the special exigencies and requirements of the asylum service, *mutatis mutandis*, the methods already approved in the case of the Poor-law and the police.

HOUSE OF COMMONS.

THURSDAY, AUGUST 12TH.

Housing and Town Planning Bill.

Answering Lord ROBERT CECIL, Mr. ASQUITH stated that he could not say when the committee stage of the Housing and Town Planning Bill would be taken.

Mr. WEDGWOOD: In view of the change which the proposals of the Government for a complete valuation will make will the right honourable gentleman postpone this Bill until next session in order to take advantage of that valuation?

Mr. ASQUITH: No, sir.

The Public Analyst for the Isle of Wight.

[illegible]

circumstances I do not feel able
objections are in no way affecte
Buchanan's report.

Tetra chloride of Carbon as a Hair-wash.

Sir WILLIAM COLLINS asked the Secretary of State for the Home Department whether he was aware of the extensive use of tetrachloride of carbon as a hair-wash, whether his attention had been called to a recent death of a young lady while her hair was being shampooed with this compound; whether his attention had been directed to the poisonous properties of carbon tetra-chloride; whether any restrictions upon the sale or use of this compound at present existed; and whether he proposed to take any steps in the matter.—Mr. GLADSTONE wrote in reply: My attention has been called to the use of tetra-chloride of carbon as a hair-wash, to the very great danger involved, and to the death referred to by my honourable friend. I am informed by the Privy Council that tetra chloride of carbon is not a poison within the meaning of the Pharmacy Acts, and there are, therefore, no restrictions as to its sale. As regards the steps to be taken in the matter, I can only say that the Director of Public Prosecutions has the question of a prosecution now under his consideration.

TUESDAY, AUGUST 17TH.

[illegible]

month.—Mr. [illegible] replied: Forty-eight
Of these six had
, and 21 had less
y recently joined

the corps, and some officers had returned during the year from stations abroad where they had already had the leave to which they were entitled.

The Tsetse Fly and Sleeping Sickness.

Mr. REES asked the Under Secretary of State for the Colonies whether the Government had yet acquired any reliable information regarding the relations between big game and tsetse fly in Central Africa; and if so what bearing such information had upon the policy of game preservation and of prevention of sleeping sickness.—Colonel SEELY replied: The relation between big game and the tsetse fly in Central Africa is a much-debated qu[illegible] [illegible] by the Secre[illegible] [illegible] research in [illegible] [illegible]on, amongst others, will receive their earnest consideration.

A Consignment of Frozen Meat.

Mr. STANIER asked the President of the Local Government Board whether he could publish the report of the medical officer of health on the consignment of frozen meat landed by the Peninsular and Oriental steamer *Palermo* at the Royal Albert Docks from China.—Mr. BURNS replied: I have no doubt that the medical officer of health of the City will ultimately deal with this matter in the report to the sanitary committee of the Corporation which will be printed and issued in the usual way. But no general report can be made for some time as the carcasses will not be thawed and examined all at once, but only as they are required for trade purposes. So far less than 5 per cent. of them have been thawed and examined.

WEDNESDAY, AUGUST 18TH.

[illegible] *Army.*

Sir WILLIAM [illegible] State for War whether he would state wh[illegible] [illegible]er treatment to which the soldiers treated at Millbank Hospital as typhoid carriers, on whom [illegible] with antityphoid injections were made, had [illegible] [illegible]ether he would lay upon the table papers showing [illegible] by the various methods employed in these cases in continuation of those already laid.—Mr. HALDANE wrote in reply: The later treatment alluded to consists in treating the urinary cases with sodium benzoate and acid sodium phosphate. X ray treatment is being tried in one of the intestinal cases with marked gall-bladder symptoms. It is yet too early to speak of results, but I shall be prepared to lay papers on the subject at a later period.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARTLETT, CHARLES E., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Chepstow (Mon.) Board of Guardians.

BROWNE, FRANCIS JAMES, M.B., Ch.B. Aberd., has been appointed District Medical Officer by the Bedwellty (Mon.) Board of Guardians.

DAVSON, FREDERICK ADAMS, M.D., C.M. Aberd., M.R.C.S., has been [illegible] Medical Officer of Health for the Dartmouth [illegible] [illegible]rity.

[illegible] C.S. Eng., L.R.C.P. Lond., [illegible] Post Office at Tenby.

[illegible] [illegible]ppointed Junior Assistant Medical Officer at Sunnyside Asylum, Montrose.

GRAY, WALTER GORDON, L.R.C.P., L.M. Edin., M.R.C.S., has been [illegible] Health for Holsworthy (Devon) [illegible]

[illegible], D.P.H., has been appointed Lecturer on [illegible] the Glasgow Royal Infirmary.

[illegible] L Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Ophthalmic Surgeon to the Hull Royal Infirmary.

MOLE, H. F., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgeon to the Royal Infirmary, Bristol.

SCALES, F. SHILLINGTON, B.C. Cantab., has been appointed Honorary Medical Officer in Charge of the Electrical Department at Addenbrooke's Hospital, Cambridge.

SMITH, G. MUNRO, L.R.C.P., M.R.C.S., has been appointed Consulting [illegible]

WA[illegible] L.R.C.P. Lond., has been [illegible] [illegible]al Infirmary, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per [illegible] [illegible]shing.

BIR[illegible] [illegible]OSPITAL, Woodchurch-road, [illegible] Officer.

BRE[illegible] [illegible]SYLUM.—Assistant Medical Officer. Salary £150 per annum, with board.

BRISTOL, BRENTRY CERTIFIED INEBRIATE REFORMATORY, Westbury-on-Trym.—Superintendent and Medical Officer. Salary £400 per annum, with board and residence.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £70 per annum, with board and lodging.

CARLISLE, CUMBERLAND INFIRMARY. [illegible] at rate of £80 and £100 per annum [illegible]

[illegible] Medical [illegible] £50 per [illegible]

EBBW VALE STEEL, IRON, AND COAL CO., LIMITED.—Medical Officer for the Inspection of Injured Workmen. Salary £250 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £60 per annum, with board and washing.

EVELINA [illegible] Southwark Bridge-road, S.E.—Hous[illegible] [illegible]lary at rate of £60 per annum, with [illegible]

FULHAM [illegible] [illegible]ammersmith, W.—Assistant Medic[illegible] [illegible]alary £150 per annum, with board, [illegible]

GLASGOW, [illegible] SCHOOL.—Chair of Physiology.

HALIFAX, ROYAL HALIFAX INFIRMARY.—Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Assistant Surgeon.

LIV[illegible] HOSPITAL.—Two House Physicians and [illegible] six months. Salary at rate of £60 per [illegible] [illegible]dence.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, [illegible] 250.

MANCHEST[illegible] WOMEN AND CHILDREN, Park-place, [illegible] Surgeon. Salary £80 per annum, [illegible]

MANCHEST[illegible] [illegible]R WOMEN AND CHILDREN.—House [illegible] 50 per annum, with board and residence.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Junior Resident Medical Officer at Hampstead, also Assistant Resident Medical Officer at Northwood. Salary in each case £50 per annum, with board and residence.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NORWICH, [illegible] PRIVATE ASYLUM.—Assistant Medical Officer. [illegible] found.

NORWICH, [illegible] HOSPITAL.—House Physician, unmarri[illegible] [illegible]m, with board, lodging, and [illegible]

[illegible]—Two Assistant Resident Surgeons, [illegible]ith apartments, attendance, light, and fuel.

OLDHAM INFIRMARY.—Senior House Surgeon, also Third House Surgeon, both for six months. Salary of former £120 per annum, and of latter £80 per annum, with residence, board, and laundry.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Surgeon, also Junior House Surgeon, both for six months, and unmarried. Salary of former at rate of £80 per annum, and of latter at rate of £40 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—[illegible] for four months. Salary at rate [illegible] [illegible]dence, and washing.

QU[illegible] [illegible]ckney-road, Bethnal Green, E.—[illegible] £100 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with rooms, commons, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

SUNDERLAND AND DURHAM COUNTY EYE INFIRMARY, Sunderland.—House Surgeon, unmarried. Salary £210 per annum.

TEIGNMOUTH HOSPITAL, S. Devon.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

[illegible] STAFFORDSHIRE GENERAL HOSPITAL.—House [illegible] rate of £80 per annum, with board, lodging, [illegible] Resident Surgical Officer. Salary £125 per annum, with board, lodging, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

BOXALL.—On August 13th, at Rudgwick, Sussex, the wife of Frank Boxall, M.R.C.S., L.R.C.P., of a daughter.

EWENS.—On August 14th, at West Chase, Maldon, Essex, the wife of H. L. Ewens, M.D., of a daughter.

GOLDIE-SCOT.—On August 16th, at Pilmuir, Pencaitland, the wife of T. Goldie Scot, M.B., of a son.

MARRIAGES.

BABER—VINCENT-WING.—On August 12th, at St. Mary's Church, Wimbledon Park, Henry Aitkens Baber, M.R.C.S., L.S.A., to Ada Mary Vincent-Wing, of Hartley House, Chipping Sodbury, Glos.

DEATHS.

DAVIS.—On August 11th, at Walton-in-Gordano, Clevedon, Somerset, Theodore Davis, M.D. Lond., F.R.C.S. Eng., aged 75 years.

MENNIE.—On August 16th, suddenly, at Balgownie, 211, Bridge-road, Battersea, S.W., James Edward Mennie, M.B., Ch.B. Aberdeen.

STEELE-PERKINS.—On July 30th, at his residence, Wilton-place, Exeter, E. B. Steele-Perkins, L.S.A., in his 68th year.

N.B.—A fee of 5s. is c[illegible] *Births,*

Notes, Short Comments, and Answers to Correspondents.

THE TREATMENT OF ADDER BITES.

MEDICAL attention in this country has been recently directed towards the treatment of adder bites owing to the severe injury sustained from an English adder by Dr. Herbert Peck, medical officer of health of Chesterfield, an accident which happily has not been fraught with such serious results as appeared possible from the reports first published. A medical correspondent whose family is proceeding for a holiday to a Cumberland dale which is said to harbour a number of adders has written to us to inquire whether a serum can be obtained in this country to counteract their poison and what other means of treatment are available. We are not aware that a special antiveneno is prepared against *Vipera berus*, the English adder, but we gather from the excellent work on "Venoms" by Dr. Calmette of Lille that the anti-neurotoxic serum prepared from cobra venom may be partially effective against viperine venoms. *If, however, the particular venom contains much* of the poison known as hæmorrhagin that serum is apparently of little use. Dr. Calmette has found it impossible to procure sufficient quantities of venoms of various origins to furnish each country with the polyvalent serums corresponding to its particular needs, and it could hardly be expected that serums should have been prepared against the poisonous snakes of the temperate European countries, injuries from which are comparatively rare. The following is a brief abstract of Dr. Calmette's recommendations for the treatment of the bite of a venomous snake:—1. Prevent abso[illegible] not more than h[illegible] tively done if a [illegible] of the limb. 2 Wash the wound freely with fresh 2 per cent. solution of hypochlorite of lime, or 1 in 1000 solution of chloride of gold; if these are unavailable use a 1 per cent. solution of permanganate of potash. A few cubic centimetres of one of these reagents should be injected all round the bite punctures. 3. Cover the wound with a dressing damped with hypochlorite of lime or pure alcohol. 4. Administer serum *if available into the loose tissues of the abdominal wall* with a Pravatz syringe. If serious intoxication has supervened from 10 to 20 cubic centimetres may be injected into a vein. 5. Give copious hot drinks, tea or coffee, and induce perspiration by wrapping the patient in blankets. Dr. Calmette says that ammonia, alcohol, or morphine are useless, and strychnine may be actually harmful. Whilst this advice is probably the most authoritative that can be [illegible] place their chief reliance in [illegible] ifying the skin about the bite [illegible] ubbing in crystals of per- [illegible]

THE ETYMOLOGY OF "ALCOHOL."

To the Editor of THE LANCET.

SIR,—A recent article in a daily newspaper in discussing the etymology of the word alcohol stated it to be the Arabic *al kohl*; [illegible] entirely to itself." This interesting statement contains a certain portion of etymological and physical truth, but by no means the whole. A supplemental physical and physiological fact is that the Arabian beauties—and even the more well-to-do members of the coarser sex—used the kohl (or antimonial) black powder as an eyelid stain with a utilitarian object comparable to that which inspired the construction of the "Venetian blind"; it [illegible] burning for centuries the light of science for the gradual illumination of Western Europe. Chemistry, as well as algebra and arithmetic—inclusive of the 10 symbolic "digits" of the latter—emanated from the impenetrable deserts which have ever been so jealously guarded by the sons of Ishmael. And so little was its jargon understood in these Western isles of our own that a sixteenth century English version of the principal works of Geber, one of the fathers of "al"-chymy, was believed by the great Dr. Samuel Johnson to have suggested the invention of the new word "gibberish." (It is very evident, indeed, to the skilled reader that the translation had not been made by a scientific expert—or even by a literary artist.) Then the Arabs—with their Jewish neighbours—were the apostles of medicine to Western Europe The famous *Canon* of the Arabian [illegible] Europe for about five centuries. Th[illegible] came from "Araby" and adjacent l[illegible] chemical substances was always tested on the human body, when the novelty was observed to be a powerful reagent. It was soon found that a fairly dilute alcohol was one of the best of astringent and tonic *collyria*. Hence it was used as an *adjuvant* to *kohl*, and frequently as a *substitute*. Hence the etymology of alcohol. I may add that the cosmopolitan diffusion of therapeutic ideas which have long ceased to be orthodox is illustrated by a story of its use in a remote Irish dispensary three quarters of a century or so ago. Brandy was dispensed to a case of granular conjunctivitis, with instructions for use after addition of an equal bulk of water. The patient's wife was well to the front with the empty "medicine bottle" on the next dispensary day. The medical man, in pouring out a new supply of the collyrium, asked how the patient found the medicine to "agree" "Oh, he likes it greatly, yer honour," was the prompt reply, "but he can never get it any higher than his mouth."

I am, Sir, yours faithfully,

Dublin, July 28th, 1909. JOHN KNOTT, M.D. Dub.

THE HOSPITAL GAZETTES.

T[illegible] much to the fancy of the surrounding Bob Sawyers. We believe that [illegible] his [illegible] the [illegible] it off leaving the door open, the patient of course being unconscious. Thereupon the cat came in and ate the eye on the table The [illegible]

—The Clinical Supplement of the *London Hospital Gazette* for July is devoted to the "Surgical Aspects of Osteo arthritis," and is from the pen of Mr. H. E. Ridewood, whilst in the body of the paper is a clinical lecture on Diseases of the Gall-bladder by Mr. Frederic Eve, besides a de[illegible] The account of the London Hospital [illegible] Mr. A. C. Palmer winning the [illegible] record of muscular action.—To th[illegible] Mr. John Bland-Sutton contrib[illegible] "Some Facts and Fancies of M[illegible] which he prophesies that whilst [illegible] diagnosis will ever remain in use, pharmaceutical remedies will be more and more replaced by vaccines prepared in the laboratory. He alludes later to the extraordinary theory once held and advanced by the Sardinian Commission, that cretinism might be due to the [illegible] *Hospital Gazette* (August) presents one of Dr. T. Claye Shaw's stimulating addresses on "The Span of Life," whilst the same journal in its previous month's issue contained a report of a case of triplet birth in which Mr. W. Wyllys safely delivered a patient of three live children and three placentas.—*St. George's Hospital Gazette* (July) continues its chapter from the Hospital's History and revives that excellent old story of the student "on the district" who was cock- [illegible] with because "he [illegible] *l Gazette* (July) is [illegible] lsed to buy a new [illegible] conjunction with [illegible]

A HOLIDAY HANDBOOK.

Mr. Walter Hill has issued a useful shilling guide book entitled, "The Holidays: Where to Stay and *What to See*," *to the districts* on the line of route of the Midland, London and North-Western, Great Northern, Great Eastern, Great Western, and *Great Central* Railway companies, and gives much useful information respecting the various towns served by these companies for the holiday-maker and tourist. There are lists of seaside, farmhouse, and country lodgings, with brief references to the *features of interest in their neighbourhoods*. The various maps and *illustrations with which the text of the* book is illustrated enhance its value to those fortunate people who have not yet taken their holidays and are making up their minds where to go for them.

THE FLY NUISANCE.

To the Editor of THE LANCET.

SIR,—I have been somewhat disappointed in the results of the formalin treatment mentioned in your columns a few weeks ago and should like to mention the method I employ in dealing with flies.

I use one of the ordinary dome-shaped fly bottles and the solution employed is simply the liquid paraffin of the Pharmacopœia, which has the advantage of being inodorous and (except to the insect community) non-poisonous. The addition of a few drops of oil of cloves prevents putrefaction of the dead flies and keeps the solution free from any objectionable smell which might otherwise arise. The mixture, however, does not seem to possess any particular attraction for flies; and this might appear at first sight a disadvantage, as it is usually necessary to "first catch your fly" by cautiously lowering the bottle over him. But this is where the sporting instincts are aroused and any hard-worked or impecunious practitioner who finds it impossible to go grouse shooting on the moors can (as I am doing) turn his attention to the smaller game of the tea-table, and thus obtain recreation which has certainly the merit of cheapness to recommend it, and which (like some advertised modes of increasing one's income) can be carried on "without interference of business." On a hot afternoon, with an hour to spare, the "bag" will be most encouraging. Once a fly touches the greasy solution he never gets out again, but slides down into it, and very quickly his career is terminated in what appears to be a comparatively comfortable state of asphyxia.

To be thus suddenly provided with a rapid and comfortable death whilst in the midst of a hearty meal must from the fly's point of view be a decided improvement on the ordinary fate of his fellows.

I am, Sir, yours faithfully,

London, August 10th, 1909. IN TOWN ALL AUGUST.

*** The majority of our correspondents have found the formaldehyde method very efficacious. It might be stated, however, that the addition has been mentioned of a teaspoonful of a sweet wine, e.g., port, or of spirit, e.g., whisky, to the formaldehyde, which appears to increase the attraction of the fluid for flies.—ED. L.

AN EXTRAORDINARY "TYPHOID CARRIER."

IN a recent editorial article in the *Boston Medical and Surgical Journal* "the most remarkable case of a typhoid bacillus carrier on record" was described. The subject was an Irish cook who had been detained two years at the hospital on the North Brother Island by the Health Department. It seemed necessary that she should be quarantined indefinitely as her release would be a menace to the health of the community. Frequent examinations showed that typhoid bacilli were constantly present in her system, and careful studies by Dr. George A. Soper and others seemed to indicate that they were generated in the gall-bladder and thence disseminated. Repeated experiments were made in order to find some method of stopping the development of the bacilli without success. It was seven years since the woman first came under observation. Twenty-six cases of typhoid fever had been traced to her with certainty and the total number of cases to which she had given rise was probably very large. The outbreaks of which she was the cause occurred in suburban well-to-do families in which she was employed as cook. She had never shown any signs of enteric fever.

COMPRESSED-AIR ILLNESS.

NOTWITHSTANDING the experience which has been acquired with reference to the action of compressed air on the human body, accidents continue to be reported from time to time. The *Engineer* of August 6th mentions that during the month of July several men were taken ill while working under a pressure of six atmospheres beneath the river Elbe. They all recovered and returned to work, but one of them, an engineer, again collapsed on subjecting himself to the increased atmospheric pressure, and died soon after being carried out.

A CURIOUS CASE.

To the Editor of THE LANCET.

SIR,—A collier, aged 20 years, was pushing a tub of coal before him where the roof of the pit is very low. A stone projecting from the roof scratched his back, causing some abrasions of the skin with slight bleeding in a few places. The roof of the pit is wet and foul water drops from it. On the fifth day after the accident I saw the case. The skin all along the dorsal vertebræ and horizontally to an extent of about seven inches was covered with inflamed papules. Two days after that these had become pustules and I punctured 30 or 40 of them. As he could not afford to run up a doctor's bill he got an order for admission into the infirmary from the parish medical officer, who glanced at his back and then signed the usual form for admission to the infirmary. That was on the eighth day from the accident. In about three weeks from the date of the accident the collier was practically well. He sued for compensation under the Employers' Liability Act. The medical referee from the company called on him for the first time 16 days after the accident and reported to the colliery company that it was not an accident but a case of acne vulgaris. The case came before the county court judge and the medical referee testified that it was a case of acne and that he must have been suffering from it for some time previously. The parish medical officer who saw him only for a moment or so, when filling the form for admission to the infirmary, on the eighth day of the accident, also testified that the case was one of acne vulgaris, and that he had seen the "typical blackheads." He also stated that acne was caused by dirt, "because these people don't wash themselves." He also stated that he had had five or six acne cases in his own practice among colliers. Judgment was given for the defendant. I may state here that another coll[illegible] who was close at hand saw the accident and gave evidence as to what happened before the court.

The collier is a healthy man with a beautifully clean skin. There was not a single pimple on head, face, neck, or chest, or anywhere except on the back, and his father says there was not a single pimple on his son's back before the accident. My theory is that it was a case of artificial acne, the irritant being the dirty water acting on the chafed or abraded skin, and the dirty water was kept in contact with his skin by his wet shirt.

Is it correct to say that blackheads are "typical" of acne vulgaris, supposing that these were present and that no mistake has been made here?

I am, Sir, yours faithfully,

August 2nd, 1909. O. O'H.

*** This case does not appear to be a typical case of acne vulgaris from its history. A possible diagnosis is septic folliculitis, if it is not, as our correspondent suggests, an artificial acne. But the data are not sufficient to form grounds for a diagnosis.—ED. L.

DR. BARNARDO'S HOMES.

THE forty-third annual report of Dr. Barnardo's Homes for the 1908 has just been issued in the form of a 64-page pamphlet wi appropriate coloured wrapper containing a number of pictures trative of the work of the institution. The number of orpha destitute children rescued in 43 years has been 67,634. Last 2518 children were admitted. The death-rate among the chi boarded out in rural districts was 2·75 per 1000, while the deat covering all the homes was about 9·24 per 1000. On admissio per cent. of the children showed signs of tuberculosis and 3 cent. of the deaths in the homes were due to tuberculosis. stated that over 12 per cent. of all cases treated in hospital s from tuberculous disease in some form. It should be rememb that a large number of the children who come under the care o institution belong to the defective or incurable class. A tab zymotic diseases shows that 41 children suffered from scarlet with 2 deaths, 120 from measles with 3 deaths, 54 from Ge measles with no deaths, 60 from whooping-cough with 2 de 11 from diphtheria with 4 deaths, 4 from enteric fever with 1 d 54 from chicken-pox with no deaths, 34 from mumps with no de making a total of 378 cases with 12 deaths. Copies of the report be obtained, post free for six stamps, on application to the h quarters of the Homes, 18 to 26, Stepney-causeway, London, E.

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Old School.—We agree with our correspondent in some of his strict on the letter sent out by a candidate for a vacant medical post, that letter is by no means a particularly bad specimen of its class. think that the method adopted of forbidding all canvassing an limiting the number of testimonials to three or so should be n regularly adopted.

Library.—We could not give an estimate of the value of the b without seeing its condition and title-page, but such seventeen century tracts are not, as a rule, worth more than a few shillings. our correspondent refers to recent numbers of "*Book Prices Curren* he may see the work in question quoted if it has a saleable value.

Enamel.—According to our analysis, the preparation is qui innocuous, consisting of shellac, wax, and plaster-of-Paris. It co tains no poisonous metal.

COMMUNICATIONS not noticed in our present issue will receive attent in our next.

Medical Diary for the ensuing Wee

LECTURES, ADDRESSES, DEMONSTRATIONS, &

POST-GRADUATE COLLEGE, West London Hospital, Hammersmi road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration
Cases in Wards. 12 noon, Pathological Demonstration—I
Bernstein. 2 P.M., Medical and Surgical Clinics. X Ra
Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.

TUESDAY.—12.15 P.M., Lecture:—Dr. Pritchard: Practical Medi
2 P.M., Medical and Surgical Clinics. X Rays. 2.30 P.
Operations. Diseases of the Skin. 5 P.M., Lecture:—Dr
Stewart: Syphilitic Diseases of the Nervous System.

WEDNESDAY.—10 A.M., Diseases of Children. 12.15 P.M., Lecture
Dr. G. Stewart: Practical Medicine. 2 P.M., Medical a
Surgical Clinics. X Rays. Mr. B [illegible]man: Diseases of the Ey
2.30 P.M., Operations. *Dr. Robinson*: Diseases of Women.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstra
of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Ra
Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.
Lecture:—Mr. B. Harman: Squint.

FRIDAY.—10 A.M., Lecture:—Medical Registrar: Demonstration
Cases in Wards. 2 P. [illegible] Surgical Clinics. X Ra
2.30 P.M., Operations. [illegible] Harman: I

SATURDAY.—10 A.M., Dis [illegible] linics. X Ra
eases of the Eyes. 2 P. [illegible] Women.
2.30 P.M., Operations.

OPERATIONS.

MO'

(2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), West-

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IT is most important that communications relating to the ditorial business of THE LANCET should be addressed *olusively* "TO THE EDITOR," and not in any case to any entleman who may be supposed to be connected with the ditorial staff. It is urgently necessary that attention should e given to this notice.

is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

ectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index to Vol. I. of 1909, which was completed with e issue of June 26th, and the Title-page to the volume, ere given in THE LANCET of July 3rd.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 19th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radio in Vacuo	Maximum Temp. Shade	Min Temp	Wet Bulb	Dry Bulb	Remarks.
Aug. 13	30 11	W.	...	123	82	64	62	69	Fine
" 14	30 19	W.	...	124	80	62	64	69	Cloudy
" 15	30 14	S.	...	129	85	61	63	70	Fine
" 16	29·76	S.W.	...	102	78	67	66	71	Cloudy
" 17	29 75	S.W.	0·01	118	72	57	67	61	Fine
" 18	29 43	S.W.	0 39	116	70	57	60	64	Cloudy
" 19	30 01	W.	0 03	114	74	58	60	64	Cloudy

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THE LANCET.

LONDON: SATURDAY, AUGUST 28, 1909.

An Address to Students.

It has for long been the custom of The Lancet to devote a number at this period of the year to a description of the facilities for medical education in the United Kingdom, and although we may thereby forestall the opening addresses that will be delivered in many of the medical schools during the first days of October, it still seems useful to us to fill the first columns of our Students' Number with a consideration of certain aspects of the current practice of medicine which have an interest for those who will shortly be entering upon its systematic study. With the October lecturers we have this in common, that our remarks are in no way concerned with the choice of medicine as a profession. That choice will have been made by the great *majority of those who turn to these pages for guidance*, and whether they have chosen ill or well rests to some extent, perhaps, on their future chances, but in the chief degree upon the five or six years that lie next before them.

There is a story of a bluff and outspoken surgeon who occupied the platform at the inaugural ceremony of the medical school year nearly a century ago, and whose first answer to the applause which greeted his appearance before the well-packed benches was an unexpected "Good heavens, gentlemen, what is to become of you all!" Not even a professional curmudgeon would bestow so cynical a greeting upon a body of medical students of to-day, for despite the traditional hardness of the medical man's life, it is true to say that given good health, industry, an ordinary self-discipline, and a facility for social intercourse—a quality by no means to be neglected during student life—a practitioner who has passed through the modern curriculum of medical education has capitalised the expenses which it has entailed into a well-assured means of earning a decent living. If he has during that period developed to a pronounced degree certain scientific or technical or personal attainments he has a fair prospect of making a very good living, even though his expenses will become larger in proportion to his income. But although we feel justified in pronouncing a fairly cheerful prognosis for the prospects of the average student, we are far from declaring that everything is for the best in this best of all possible medical worlds. There are, on the contrary, several severe disabilities which have to be faced in the practice of medicine in this country, and our present intention is to forewarn a certain number of its future practitioners of the most flagrant of these abuses at the outset of their connexion with their profession. We do this, as it seems to us that the best hope of mitigating the evil lies in the continuous increase in the professional efficiency of the men and women who will in the future be admitted to the practice of the medical profession by the qualifying bodies of the United Kingdom. The beginning of the cure, in fact, rests in the hands of the present generation of students, and the disease which they will have to face is, we suppose, as universal as human nature in its distribution.

Unqualified practice—the deliberate attempt of those who have not been taught at usurping the position of those who have—constitutes an opposition which the practitioner has to face to-day in more virulent form than ever. It manifests itself in many ways. The most widespread of these is the patent-medicine bottle or pill-box, the contents of which range from substances as innocuous as they are useless to drugs of acknowledged and often dangerous potency. A very large proportion of people in this and in every other nation is in the habit of buying these products from vendors in whom a keen and rapacious business ability replaces any approved medical knowledge, and under the direction of a printed label the purchasers continue to dose themselves for weeks or months at a stretch for diseases with which, aided much by the suggestive influence of the advertisements in newspapers that brought the nostrum to their notice, they imagine themselves to be afflicted. The maker and advertiser of the nostrum and the patient who considers himself competent to diagnose his *own condition* and to prescribe his own remedy form but too often an ideal conjunction of knave and fool. Again, a person, not rarely a person ignorant out of the common, announces a method of curing some special ailment, frequently cancer, consumption, asthma, paralysis, dislocations, or corns. This Cagliostro pushes his claims (which are beyond all the boasts of orthodox medicine) by means of advertisements and on the stage of assembly halls, with the result that the public is gulled into parting with its money in return for a limited amount of frequently injurious treatment. The drugs or manipulations which the quack administers may not always be actively harmful, but indirectly they all may have fatal results by giving a false sense of security to a patient whom skilful, prompt, and drastic measures can alone save. Such a case is that of a woman with a cancerous growth in her breast who buys and rubs into it an irritant ointment and persists in neglecting the only advice which would have directed her to proper treatment until her disease has spread beyond the surgical aid that might well have been effective at the outset. In such a case it is true the quack may be brought to book in the law courts if he has definitely promised a cure, but if he has not, and provided he has assumed no medical title or qualification, the law allows him to pursue his truly nefarious trade without hindrance. The law says so implicitly if not explicitly, for the preamble of the Medical Act of 1858, which established the Register of qualified medical practitioners, runs: "Whereas it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners," which clearly gives the public the equal chance of picking or avoiding either class. And we have not yet exhausted the list of medically ignorant persons who are allowed to take advantage of the blindness of the public where its physical welfare is concerned. "Faith-healers," under the titles of Christian Scientists, Mental Healers, and the like, employ a combination

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of "suggestion" treatment—a treatment by no means to be despised under proper scientific control—with doctrinal formulæ as a system for the cure of disease and for the gain of personal emoluments or notoriety. As in the case of the blatant quacks of whom we have spoken, these mystical practitioners constitute a danger to the public on account of their inability to differentiate between organic and functional disease which leads them to promise a false security to their patients. A prominent section of them denies the existence of disease except in the mind of the patient, and is able apparently to convince of the sense of their teaching not only the sick people but their healthy relatives.

The attitude of the persons who accept the pretensions of these various irregular practitioners may fairly be figured by that of a man with no knowledge of the sea owning a yacht in which he wishes to cross the ocean, and to whom a plausible longshoreman offers his services with the tale that he has a unique system of navigation by which the port of destination will be reached in half the time usually regarded as possible. Inquiries as to the source of his secret elicit no substantiation of his claims, but the yacht owner, apparently crediting him with a divine inspiration and imagining his services to be cheaper than those of a certificated master, puts him in charge of his vessel, only to come to grief on rock or sandbank. This seems to us an under-statement of the gullibility of those who to pilot them through sickness seek the services of one quite unfitted for the investigation of the symptoms of disease and unskilled in their interpretation. In almost every other branch of human activity save in the practice of medicine the public is content to credit men trained to a special calling with special aptness to follow that calling, and it seeks their aid when the special services in question are required. But medical advice and medical treatment—involving knowledge so multiform, so perplexing, and so exacting that five years of constant study can only barely fit a man to enter upon them—are sought by the public, the very people most interested in their skilful exercise, from the hands of persons with no further qualifications than an empirical half-knowledge backed by impudent assurances. This statement of fact can hardly fail to elicit the question, "If so large a section of the public neglect their own interest in this matter, is it not the duty of the State to protect them in spite of themselves, as it protects them from being victimised by other enemies of the people?" The reply is that whatever we may consider the duty of the State to be in the matter, such benevolent interference can hardly be reckoned within the sphere of practical politics. The right of every citizen to impair his physical efficiency under the misdirections of unqualified practitioners or to experiment upon his children's health by dosing them with patent medicines of the nature of which he is entirely ignorant appears to constitute an inalienable privilege of the liberty of the subject, and its total suppression can only be contemplated in the vision of Utopia. And wise men do not seek this sort of absolute protection for science which can so greatly rely upon its own strength, while they recognise the necessity of not interfering unduly with the discretion of the public and the ministration of friends. What is wanted, and wanted badly, however, is control of the quack, and this it seems possible we, in common with other civilised nations, may enjoy. We may hope that in the course of the near future some legislative steps will be taken towards this end; indeed, the General Medical Council is at present engaged in collecting evidence which may lead to the appointment of a Royal Commission to inquire into the whole matter. But between the uncertain report of a problematica commission and the enrichment of the Statute book with a measure of practical utility a great gulf of years may well be fixed, and even were such a measure enacted the coöperation of the nation would still be needful to give it full effect. A well-framed Act to regulate the licence of the charlatan and to suppress at any rate the more glaring evils of unqualified practice would meet with general approval, but we would urge upon the younger members of the medical profession, those who will supply its most active force during the next few decades, the necessity of facing the evil for themselves and not sitting down to wait for relief which the State may be tardy to give them. It is, indeed, good to impress legislators with the righteous claims of the trained and sworn defenders of the human body against freebooters; it is better still to educate the public into a just appreciation between the merits of the two camps. How is this to be done? We think only in one way. Personal argument and persuasiveness may appeal to the more intelligent section of the community now under thrall to the patent medicine vendor, but even some of these may fall away from their new-found faith when the medical adviser is not at hand to spoil the seduction of some lying advertisement. The real weapon must be increased medical efficiency, keeping pace with the intelligence of a public becoming more and more educated. The truth of medicine must be made plainer and plainer to the eyes of a vast number of persons who want to understand and whose desire should be satisfied.

Those who are entering upon the study of medicine owe it to themselves, to their calling, to their brethren, and to the public welfare to make their apprenticeship a time of laborious days—which will yet leave space for not a few reasonable delights—so that when the hour comes for them to pass out from the sympathetic shelter of their schools they may be equipped with so complete and ready a knowledge of the principles of medicine that in their hands its practice shall be thorough, resourceful, and honest, and will thus afford an impressive refutation of the claims of uneducated charlatans, however loud their pretensions to a knowledge of the healing art. As the efficiency of our science increases, so will its value become more manifest even to the careless eye; and men turning in increasing numbers to medicine for the fruits of knowledge will realise the falseness of the pretenders' promises. To this consummation we look forward with confidence; its achievement is for the future generations of the medical profession; whether it come early or late will depend on the profession itself, not only upon the work of its leaders, upon the renown of the teachers in its schools, the astounding triumphs of its surgeons, the patient researches of its pathologists, the enunciation of wide new principles by its most brilliant minds, but upon the great body of practitioners throughout the land, who will spread abroad the knowledge of all these and of many smaller things, who will apply their practical lessons to the restoration and preservation of health and the mitigation of pain, and who in so doing will add their own quota of observation and experience to the sum of scientific knowledge. This is no visionary picture; it is the inevitable outcome of a contemplation of the recent history of medicine and of collateral science. True, the followers of medicine have a harder task than those who profess the physical sciences, for all their researches are complicated, and too many are baffled, by the inscrutable problems of life and to a lesser degree of human personality; but such watchwords as antisepsis, anæsthesia, serum-therapy, vaccination, malarial prophylaxis, are sufficient to remind us of the victories which have been won within the space of a century over the primæval forces of disease and death. Are not these a splendid earnest for the future of medicine? And in spite of them all there are yet fields for conquest to glut the ambition of a very ALEXANDER of science: Cancer, Bright's disease, insanity, epilepsy, plague, acute rheumatism, sleeping sickness, tuberculosis—here are only a few of the enemies from which mankind must look to medicine for deliverance by prophylaxis or by cure. The field-marshal's baton in the soldier's knapsack was a bauble beside the future fame and gratitude that await the man who shall do the transcendent service to his race that is implied in the successful solution of any one of the remaining problems—a man perhaps now entering upon the studies that are to form the prelude for this grand performance. If any doubt the reward, let him remember that an extensive plebiscite of France placed PASTEUR above NAPOLEON as the greatest of Frenchmen.

And we repeat that in the accumulation of such victories and in the education of the public mind to their significance lie the destruction of unqualified practice. Its end will be not a violent but a "natural" death—a death from inanition. Too premature an attempt to kill it will meet with determined opposition from powerful forces of vested interests and finance. When it begins to languish in the growing light of the knowledge of scientific medicine, finance will soon enough leave it to its fate. But that light needs constant kindling by fresh torch-bearers if it is to burn with increasing brilliance. In the beginning all was dark; then arose the twilight of an empirical medicine which, though at first in priestly hands, later any man might learn by observation, aided by tradition. The Middle Ages knew a professional class of medical practitioners who sought to conceal the instability of the foundations of their art by adorning it with a windy and fantastic scholasticism. Perhaps in those times the unorthodox and untrained practitioner was often a better healer than the learned doctor, for he was untrammelled by such mental lumber, and he did not scorn to use his hands. And thus the quack gained his foothold in mediæval England. When BACON and HARVEY brought the experimental method into English medicine the empirical practitioner began to be hopelessly left behind in the march of medical science, and in mediæval ignorance he still remains. But the nation that took him to its heart in the ages of scientific darkness still clings to him and reads attentively in its newspapers the same glib lies as sounded through the market places of the fifteenth century. Many imperfections still remain in our system of orthodox medicine, imperfections which afford the quack of to-day the chief weapons in his armoury, his loud claims to success where "no doctor could give relief." But in spite of his claims it is noteworthy that his only effective remedies are borrowed from the orthodox pharmacopœias and that a large part of their benefit is often lost owing to the indiscriminate methods of their administration.

This, then, is the situation which every student now entering upon the medical curriculum will have to face when he has been registered as a person qualified for the practice of medicine. We do not wish to magnify the apparent disability that it will bring to any individual practitioner, for the amount of direct competition which each will meet from unqualified persons is small, and the self-drugging practised so universally by all classes leads ultimately to the accession of patients who have found out the folly of it. But a great number will go on dosing themselves year after year, suffering many things rather than applying for scientific advice, or will apply for that advice when medical services can no longer hold out any prospect of relief. Some of these unfortunate folk, it is true, continue to treat themselves because they "can't afford doctors" and will not apply for Poor-law relief, but this is a situation which impending legislation will probably alter. The problem of medical relief for the poor no less than for the destitute is a very difficult one, and the statutes will be hard to frame which are to meet all the complications. But legislation will be successful by as much as it attempts to reward adequately the medical man who has to do the work, and it behoves our profession to be ready to deserve generous treatment. It should be the aim of our profession to increase its own efficiency by every means in its power and to show the public the overwhelming preponderance of benefit due to its ministrations.

As to the means by which the individual student may best prepare himself for this task, if he attend the opening lecture at his school in October he will very likely hear excellent advice on the matter. We will only say that he will find himself face to face with an overloaded course of study and that he cannot afford to waste a day in sitting down to look at it If he passes through it in the statutory five years he will have done exceedingly well; there are experienced teachers who consider that the time is in all cases by a year too short for what he has to do and learn. The University of London has indeed recently given effect to this opinion by adding six months to the curriculum for its medical degrees, and it has also redistributed the time at the student's disposal by giving the period of clinical studies an advantage over that spent in the aquisition of the preliminary medical sciences. With this latter policy we are in full accord, for it concentrates the student's attention upon his life work—the study and treatment of sick people. To do this effectively we would advise him to learn as much as he can at the bedside and as little as need be from books. Books are, of course, necessary: while they are replacing largely the old formal lectures, which tend more and more to become conversational demonstrations, books bring the student into acquaintance with a large number of facts all of which he cannot have an opportunity to learn from personal observation but which it is necessary that he should master. But books have their dangers. Over a certain type of mind they have such an influence that its possessor will frequent the library in preference to the ward, and at examination, when confronted with the task of describing a disease, will not search his memory for the likeness of a case which he daily observed at the bedside but will attempt to conjure up a picture of a printed page, and to transfer its contents to paper. In our experience those qualified men who are now doing brilliant work in ward and laboratory have rarely been omnivorous crammers of other men's writings. If asked to supply a scheme for the allotment of the student's hours when he has entered upon his clinical work we should say, give most to the wards and special departments, give as much to the clinical laboratories and post-mortem room as to the study of books, and out of the remainder devoted to exercise on playing fields, drill-ground, or river, leave something for the cultivation of general literature and of the society of people not interested in medical matters and averse from their discussion.

Lastly, have an ideal, or fixed ambition. This is a very valuable equipment for every student. The ideal of the medical student need not be beyond the dreams of fulfilment, but it had better be beyond likelihood, for it will then last longer and command a deeper devotion. Scientific eminence, and even the universal fame of a LISTER or of a HUXLEY, may be the light which a few will follow; others, probably the majority, will be content with a humbler humanitarian aim. Though it is now not the mode to vaunt the nobility of the profession of medicine, but rather to allow that it is but a hard-working manner of earning a living, yet our calling remains the most humane, often the most unselfish, and perhaps the most interesting of all mortal activities. It is, moreover, a profession of growing consequence in the life of the nation and one to which the statesman, the general, and the civic authority must look with increasing respect for counsel and coöperation vital to the great interests under their keeping. The proper and full advancement of medicine rests with its practitioners, as does the only sound policy for the defeat of unqualified opponents; and splendid as is the scientific heritage of medical men in the United Kingdom, the labours of those who have gone before will avail them nothing unless their results are regularly added to by patient and continuous work. For work, we have it on the word of a master of medicine whom our country has delighted to honour, is the master-word in medicine.

AN ADDITIONAL DIRECT REPRESENTATIVE FOR THE GENERAL MEDICAL COUNCIL.—The *London Gazette* of August 20th announces that the King has approved of the Privy Council's recommendation that the registered medical practitioners in England and Wales shall have the power of returning an additional member to the General Council of Medical Education and Registration, but that the addition in question shall not be made until the next ensuing general election of Direct Representatives.

THE MEDICAL BRANCH OF THE OFFICERS TRAINING CORPS.

NO student can fail to have paid some attention to the reorganisation of our national defences which has taken place during Mr. Haldane's tenure of the War Office through the machinery of his Territorial Army scheme. Those who have followed its development more closely will be aware that the scheme has included what the old Volunteer forces sadly lacked—the establishment of an efficient medical and sanitary service for the Territorial Army upon a basis similar to the Royal Army Medical Corps which serves the expeditionary or "Regular" Forces. This scheme has been due in chief measure to the administrative ability and enthusiastic work of the late Director-General of the Army Medical Service, Surgeon-General Sir Alfred Keogh, who with his chief staff officers last year made a tour of the country, addressing large audiences of medical men in many important centres, explaining the details of his scheme and inviting them to discuss its details, with the result that he secured the sympathetic coöperation of the medical profession and the enrolment of a large number of its members as active or *à-la-suite* officers of the Territorial branch of the Royal Army Medical Corps. It is quite obvious that the upkeep of this most important branch of the military service of the country will always depend entirely upon the medical profession, and those who are entering upon their preparation for that calling may well consider what steps they can take to prepare themselves to take their part in the national defence. There are a certain number of medical men and students who are more attracted to the combatant side of the Territorial service, perhaps because it affords a complete change from their ordinary work, but the scientific services of a man possessed of medical knowledge must be, as a rule, of far more value to the army than could be his combatant services. In every recent large campaign the military medical services have had to be augmented by civil practitioners, and however skilful at their work these emergency volunteers may have been, it is obvious that they would have performed it under much easier conditions if they had undergone a thorough peace training in the practice of military medicine in the field The ordinary civil surgeon, for instance, is totally ignorant of the principles of camp sanitation, or of the hygienic control of troops on the march. We need say no more to urge students from the outset of their medical studies to begin to master the most useful methods by which they can place their expert knowledge at the disposal of their country in time of need, but we would call their attention to the fact that in the Medical Branch of the Officers Training Corps there exists the ideal means for such a patriotic self-preparation. The Officers Training Corps was founded last year to give a preliminary military training to undergraduates at the various universities and other students, and thus to prepare for the establishment of an efficient reserve of officers and to supply commissioned officers for the Territorial Army, thereby fulfilling a national need which was never adequately met under the old Volunteer system. It is now proposed to form in Officers Training Corps centres where there are medical schools Medical Training Units such as we have described, and such units have been already established at Oxford, Cambridge, Edinburgh, and London, the latter University having raised since January last about 230 medical cadets, who are now efficient for their first year. The raising of similar units in other university centres depends entirely upon the enthusiasm of their medical students, and even if the hospital cricket and football teams have to suffer in consequence, it is to be hoped that before very long every branch of the Officers Training Corps will have an efficient medical section. We must add that cadets of the Officers Training Corps have no legal liability to service, not having to take the oath of allegiance, but should they intend to join the Special Reserve of Officers, the Territorial Force, or the Royal Army Medical Corps, the possession of certificates "A" and "B" taken in the Officers Training Corps after two years' efficient service will give them special advantages in the reduction of their probationary periods, the exemption from certain promotion examinations, and the addition of marks to their credit in entrance examinations should they subsequently desire to enter the Royal Army Medical Corps. Further information can be obtained from the officers commanding the medical units of the Officers Training Corps at the centres we have mentioned, but it will be useful to print the following details of the training :—

The Training Unit which it is decided to form in the Medical Branch of the Officers Training Corps is a section of a field ambulance Its [illegible] a quartermaster, and about [illegible] complete field ambulance [illegible] the field ambulance is to [illegible] to the most advanced hos- [illegible] nication, and provide the [illegible] in their care. The unit [illegible] etchers and ambulance [illegible] yance of the wounded, [illegible] tents and medical and [illegible] r temporary housing and [illegible] personnel is similarly [illegible] a *personnel* of non com- [illegible] vers and bâtmen which in [illegible] Service Corps, forming a [illegible] rms an integral part of the field army in war, and there are three field ambulances to each infantry division. The field ambulance is under the immediate command of the medical branch, and is an autonomous and a self-contained unit. It offers opportunities of practising all the duties of the medical branch in the field The exercises that are practised in camp are—The laying out and pitching of the camp. The construction of field kitchens, &c. Bearer Division exercise. The rendering of first aid to, the collection and [illegible] Tent [illegible] an outfit consisting of a suit of service dress, forage cap, gaiters or puttees, and great-coat, subject to certain rules. The cost of the outfit will, in the case of cadets who obtain, or have already obtained, Certificate "A," be borne by army funds.

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS AT BUDAPEST.—The following receptions and fêtes have been arranged during the approaching Congress. On August 28th a soirée of welcome will be given at 9 P.M. in the Gallery of Fine Arts. On the next day, at 11 A.M., the official opening of the Congress will take place at the municipal redoubt, and at 3 P.M. the inauguration of the statue of the late Professor Joseph de Fodor in Sándor-tér (Alexander-square). In the evening the President of the [illegible] Park Club in honour of the [illegible] ugust 30th, the municipality [illegible] an official reception to the congressists, and the next evening the ladies' soirée will take place. On Wednesday, Sept. 1st, at a Court evening reception, the Archduke Joseph, representing His Majesty the Emperor-King Francis Joseph, will receive the official delegates of the Governments, the University, and others. On Sept. 2nd the presidents of the 21 sections of the Congress will each give a reception, and on Sept. 3rd Count Albert Apponyi, Royal Hungarian Minister of Religion and Public Instruction, will give a final soirée at the Park Club Numerous invitations have been given to members of the Congress to visit scientific and other institutions in and near Budapest.

THE IMPERIAL CANCER RESEARCH FUND.—The honorary secretary of the Imperial Cancer Research Fund has received from the Duke of Bedford, vice-president, a further donation of £1000 towards meeting the overdraft at the bank, thus saving the Fund from drawing on its capital.

THE STUDENT'S GUIDE.

SESSION 1909-1910.

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A PREFATORY STATEMENT.

THE quantity of the subjects which fall necessarily within the scope of our educational number has now become very large, and it may be as well, as on previous occasions, to explain the scheme upon which the following guide to a medical career in this country is constructed.

The General Council of Medical Education and Registration, conveniently known as the General Medical Council, is the controlling authority, under the Privy Council, of the medical education of the land. Under the provisions of the Medical Acts various universities and corporations are recognised as being examining bodies whose degrees or diplomas entitle to medical registration, and it is among the duties of the General Medical Council to keep the official register and to ensure by periodical visitations that the tests of the various examining bodies are maintained at a due standard. We begin by describing the powers of the General Medical Council, and go on to give in detail the regulations of the various examining bodies.

But the student must be taught as well as examined, and the systems under which he can obtain instruction do not conform to one pattern. The curriculum of the medical student falls into two parts, the preliminary subjects and the professional subjects, and the two cannot be sharply divided. The extent to which they are allowed to overlap under different schemes of education varies a good deal, while the extent to which they ought to overlap is a perennial subject of debate. The important preliminary subjects are chemistry, pharmacology, physics, biology, anatomy, and physiology, and they are taught in the school proper; the professional subjects, medicine, surgery, and obstetric medicine—under which headings all forms of specialism are included—must be learned in the wards of a hospital. All schemes of medical education require a school and a hospital, but there their uniformity ends.

The first point on which the medical student has to make up his mind is whether he desires a medical degree which will give him the definite title of Doctor or Bachelor of Medicine (coupled in many cases with that of Bachelor of Surgery), or whether he will be content with a diploma certifying him to be a Member or Licentiate of one or other of the great medical corporations and as such entitled to be registered as a medical practitioner. If he desires a degree he must matriculate at a university and go through the course of studies required by the regulations of its medical faculty, and it is well that he should bear this in mind from the outset, for many diplomates. desiring later to becoming medical graduates, have been debarred from doing so through having neglected to pass a university matriculation examination at a time when they were freshly versed in their preliminary "arts" and general studies. It is particularly useful to take the London matriculation examination, which is accessible in several prominent centres, as it opens the door to the medical faculty of any British University. Accordingly we print with some detail the regulations for that standard, if much criticised, test of a good all-round secondary education.

In the Student's Guide to medical education, which follows, we have collected together under their respective headings the chief information concerning the facilities for medical study, both "preliminary" and "professional," and the regulations for examinations at the various teaching centres of the United Kingdom, so, for instance, that a student desiring to pursue his studies and obtain a medical degree at Cambridge, Edinburgh, or Manchester may find under one heading an account of the medical faculty of the University in question, of the hospitals which form its field for clinical instruction, and of the prizes and scholarships which it offers to the student of medicine.

It will be readily seen, however, that it is impossible to adhere rigidly to this plan without a good deal of overlapping and doubling of information, for, as is well known, the medical schools of some universities are served chiefly by hospitals in other centres. Thus the medical students of Oxford and Cambridge almost uniformly pursue their clinical studies in London, whilst any student who has gone through all his training in an approved provincial centre may sit for a degree in Medicine at London University. Again, when we come to consider the corporations which have the power to grant diplomas qualifying their possessors for the practice of medicine we find that they usually have no schools attached to them, but that they examine students who have gone through the curriculum at any recognised metropolitan or provincial school to the satisfaction of their teachers, and in accordance with the regulations of the corporations. The plan we have adopted has been to divide the Guide into the three main headings of England, Scotland, and Ireland, and to deal with medical education in each country as a separate entity, describing first the medical faculties of the universities in each country, and following with an account of the medical corporations having powers to grant diplomas by examination. Under the heading of each university we give a general description of its arrangements for conferring medical degrees, of its facilities for preparing its students for those degrees, particulars of its scholarships and prizes, and of the hospitals affording clinical instruction and situated in the neighbourhood of the university buildings. Following this plan, the metropolitan medical schools and hospitals are grouped in their proper place as schools of the University of London, although they serve other universities and the diploma-granting bodies. A similar plan is adopted in dealing with the provincial universities, the hospitals in connexion with each being described; for though these are not officially "schools" of the universities they supply an integral section of the teaching required by their candidates for medical graduation, and so for practical purposes may be looked on as constituent parts of the university system. The link is made all the closer by the common presence of many teachers on the medical staff of a hospital and on the staff of lecturers of the university with which that hospital is connected. Following the description of medical education at the universities, an account is given of the regulations of the various corporations granting diplomas for the practice of medicine. The schools serving these examining bodies are identical with those already described, with the addition of the principal colonial medical schools. The Student's Guide contains also an account of certain provincial hospitals which afford facilities for clinical instruction, and at which students may take out some part of their course, but which are not officially connected with any teaching centre.

Detailed information concerning all those medical schools and their hospitals naturally forms the bulk of the Students' Number of THE LANCET; but we follow upon this with an account of medical employment in the Naval, Military, and Indian Medical Services and in the Public Health Service. We add the chief information useful to those desiring a diploma in public health or a special training in tropical medicine, together with an account of the facilities for post-graduate study, a branch of medical education the importance of which is rightly receiving increasing recognition. The Student's Number concludes with a report upon the system of education in dental surgery.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

POWERS AND DUTIES OF THE GENERAL MEDICAL COUNCIL.

As there is apparently, even among members of the medical profession, a great amount of ignorance as to the powers and duties of the General Medical Council, we think it well to lay clearly before our readers what the General Medical Council is and also what it is not.

Many of the false ideas on the subject are due to the use of the shortened title, "General Medical Council." The full title is, "General Council of Medical Education and Registration of the United Kingdom." This title is in accordance with the Medical Act of 1858, by which the General Medical Council was established under the Privy Council to enable persons requiring medical aid to distinguish qualified from unqualified practitioners. The Council was thus instituted not primarily for the benefit of the medical profession but to ensure an efficient medical service to the public. It is obvious that by so doing the profession itself gained, in that official sanction was given to reputable practitioners only, while a proper guarantee was afforded to the public that the standard of medical education should always keep abreast of the scientific knowledge of the day. The powers of the Council under which it fulfils these important functions fall under four heads. It is first a registering body: it registers the entry of students upon their medical studies and also the attainment by them of the degrees or other qualifications that legally entitle them to practise medicine. This last duty forms its chief service to the State, as a complete list of practitioners of legal standing is thus rendered available for the information of the public. Secondly, it assures the public that the education of medical men is kept up to an efficient standpoint by maintaining at the proper pitch the standard of the various medical examinations. Thirdly, it is a penal and disciplinary body, having power to remove from the Register any practitioner adjudged guilty of conduct "infamous in a professional respect." Here again it is the public interest that is first considered, although these powers are for the very material advantage of the medical profession. The last duty of the Council is the codification of pharmaceutical remedies. Reform in the administration of the finances of the Council has of recent years removed acute pecuniary strain from that body, but the day should soon come when the State, recognising the public value of the work of the Council, should be willing to subsidise its efforts. Registrars are appointed by the General Council and by the Branch Councils to keep registers of qualified persons. They are bound by Section XIV. of the Act to keep their registers correctly, a duty which, mainly owing to the apathy of members of the medical profession, can only be performed with difficulty.

It is as well here to put down the advantages, such as they are, of being duly registered. A duly registered practitioner may sue in the courts of law for the recovery of charges for medical attendance or advice, or surgical attendance or advice, or for the supply of medicine, or for the performance of any operation—provided that he is not debarred from suing by being a Fellow or a Member of any corporation which objects to its Fellows or Members so suing. He may be exempted, if he so desire, from serving on juries, from serving sundry corporate and parochial offices, and from serving in the Militia. Only a registered practitioner can hold appointments in the navy, army, and in sundry Poor-law and other institutions. Only a registered practitioner can sign a valid medical certificate. Removal of the name from the Register debars a man from all the above-mentioned privileges.

The General Medical Council is in no way a medical protection society or a medical defence union. It is not a professional union or a guild charged with looking after the interests of the medical profession after the manner of the old trades guilds, except in so far as it is concerned with the education of medical students. It has no powers over any member of the medical profession except to remove the name of any offending member from the roll of the profession or Medical Register. Practitioners may be removed from the Medical Register (1) if convicted of felony or misdemeanour in England, or in Ireland, or in

Scotland of any crime or offence, and (2) on being adjudged by the General Medical Council to have been guilty of "infamous conduct in a professional respect."

The General Medical Council is, we repeat, primarily a body charged with looking after medical education; it is but little concerned with medical politics and, as a matter of fact, the time of the Council is almost entirely taken up with considering educational and registration matters, the latter including the penal cases of removal from the Register. The Council at present consists of 34 members, of whom, as will be seen by the annexed list, all but 10 are official representatives of some corporate body. Five members are chosen by the Crown on the advice of the Privy Council, and five others are elected by the members of the medical profession as Direct Representatives.

President of the General Council.—Sir Donald MacAlister, K.C.B. Members of the General Council.—Dr. Norman Moore, chosen by t[illegible] Sir Henry Morri[illegible] England; Sir Hug[illegible] Society of London [illegible] of Oxford; Sir [illegible] of Cambridge; [illegible] of Durham; D[illegible] Dr. John Dixon [illegible] Robert Saundby, University of Birmingham; Dr. Richard Caton, University of Liverpool; Dr. Alfred George Barrs, University of Leeds; and Dr. William Tusting Cocking, University of Sheffield. Sir John Batty Tuke, M.D., M.P., chosen by the Royal College of Physicians of Edinburgh; Dr. James William Beeman Hodsdon, Royal College of Surgeons of Edinburgh; Dr. David Neilson Knox, Faculty of Physicians and Surgeons of Glasgow; Sir Thomas Richard Fraser, M.D., University of Edinburgh; Sir Donald MacAlister, K.C.B., University of Glasgow; Dr. David White Finlay, University of Aberdeen; and Dr. John Yule Mackay, University of St. Andrews. Sir John William Moore chosen by the Royal College of Physicians of Ireland; Sir Thomas Myles, Royal College of Surgeons in Ireland; Dr. Francis George Adye-Curran, Apothecaries' Hall of Ireland; Sir Charles Ball, University of Dublin; and Sir Christopher John Nixon, Bart., M.D., Royal University of Ireland. Nominated by His Majesty, with the advice of his Privy Council: Mr. Charles Sissmore Tomes, Sir William Henry Power, K.C.B., Sir John Williams, Bart., K.C.V.O., Dr. David Caldwell McVail, and Dr. James Little. Elected as Direct Representatives: Dr. Langley Browne, Dr. H. A. Latimer, Dr. L. S. McManus, Dr. Norman Walker, and Dr. Leonard Kidd. Treasurers of the General Council: Mr. Charles Sissmore Tomes and Sir Henry Morris, Bart.

THE EDUCATIONAL CURRICULUM.

Professional Education.—The course of professional study after registration shall occupy at least five years. The Final Examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

Registration and Preliminary Examination of Medical Students.—The following are the General Medical Council's Regulations in reference to the registration of students in medicine:—

Every medi[illegible] prescribed by [illegible] of medical stu[illegible] branch registrars. Every person desirous of being registered as a medical student shall apply to the branch registrar of the division of the United Kingdom in which he is residing; and shall produc[illegible] cate of his hav[illegible] required by the [illegible] he has attained the age of 16 years, and has commenced medical study. The branch registrar shall enter the applicant's name and other particulars in the Students' Register and shall give him a certificate of such registration. Each [illegible] several licensing [illegible] that part of the [illegible] sufficient number of blank forms of application for the registration of medical students. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than 15 days before the date of registration. In addition to the universities and schools of medicine there are many institutions where medical study may be [illegible] tions are dealt [illegible] which reports [illegible]

The Preliminary Examination in General Education, required to be passed previously to registration as a medical student, is as follows:—

1. English language [illegible] including grammar, t[illegible] translation of Englis[illegible] prising (a) arithmetic [illegible] and (c) geometry, the [illegible] with easy deductions. [illegible] (b) a modern language.

In many cases the Council will not accept certificates of pass in Preliminary Examination in General Education unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed at the same time.

A degree in Arts of any university of the United Kingdom or of the colonies or a certificate of having passed the final examination for a degree in Arts or Science of any university in the United Kingdom is considered a sufficient testimonial of proficiency.

H. E. Allen, LL.B., Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 54, George-square, Edinburgh.—*Richard J. E. Roe, Registrar of the Branch Council for* Ireland, 35, Dawson-street, Dublin.

THE EXAMINING BODIES.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student.

I.—*Universities in the United Kingdom.*

University of Oxford.—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Responsions. Moderations.

University of Cambridge.—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Previous Examination. General Examination.

University of Durham.—Matriculation Examination for Science, Letters, and Music. Senior Local Examinations.

University of London.—Matriculation Examination.

Victoria University of Manchester.—Matriculation Examination.

University of Birmingham.—Matriculation Examination. Senior School-leaving Certificate.

University of Liverpool.—Matriculation Examination.

University of Leeds.—Matriculation Examination.

University of Wales.—Matriculation Examination.

University of Edinburgh.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science [illegible] reliminary Examination of the [illegible] Graduation in Arts or Science or Medicine and Surgery.

University of Glasgow.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery.

University of St. Andrews.—Preliminary Examination of the Joint Board of Examiners for Graduation in Arts or Science or Medicine and Surgery. Final Examination for the diploma of L.L.A.

University of Dublin.—Junior Freshman Term Examination. Special Preliminary Examination. Junior Exhibition Examination. Examinations for the first, second, third, or fourth year in Arts.

The National University of Ireland: The Queen's University, Belfast.—The examinations of these newly constituted bodies are, of course, recognised by the Council.

Oxford and Cambridge Schools Examination Board.—Higher Certificate and School Examinations, Higher Certificate (certificates to include the required subjects).

II.—*Medical Licensing Bodies.*

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.

III.—*Educational Bodies other than Universities.*

College of Preceptors.—Examination for a First Class Certificate; Preliminary Examination for Medical Students.

Intermediate Education Board of Ireland.—Middle Grade Examination; Senior Grade Examination.

Educational Institute of Scotland.—Preliminary Medical Examination.

Scottish Education Department.—Leaving Certificates in Higher Grade or in Honours. Intermediate Certificate.

Central Welsh Board.—Senior Certificate Examination.

IV.—*Indian, Colonial, and Foreign Universities and Colleges.*

Every Certificate from Indian, Colonial, and Foreign Universities and Colleges must contain evidence that the Examination has been conducted by or under the authority of the Body granting it, must include all the subjects required by the General Medical Council, and must state that all the subjects of Examination have been passed in at one time; copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose vernacular is other than English an Examination in a Classical Oriental Language may be accepted instead of an Examination in Latin. The German Abiturienten-Examen of the Gymnasia and Real-gymnasia and the examinations entitling to the French diplomas of Bachelier ès Lettres and Bachelier ès Sciences are recognised by the General Medical Council.

The remainder of the curriculum, though all under the supervision of the Council, is in detail in the hands of the various degree- and diploma-granting bodies whose representatives are members of the General Medical Council. In the next pages we give the regulations of the various examining bodies, but it must always be remembered that the examinations are under the supervision of the General Medical Council who visit the various centres in turn and closely inspect the procedure.

THE MEDICAL EXAMINING BODIES AND SCHOOLS OF THE UNITED KINGDOM.

A GUIDE TO THE FACILITIES FOR OBTAINING THE VARIOUS MEDICAL DEGREES AND OTHER QUALIFICATIONS AVAILABLE IN THE BRITISH ISLANDS.

I.—ENGLAND AND WALES.

THE UNIVERSITIES.

UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine, *B.M. and D.M.*, and two degrees in Surgery, *B.Ch. and M.Ch.*

Graduates in Arts (B.A. or M.A.) are alone eligible for these degrees. The most convenient course for the B.A. degree for intending graduates in Medicine is to take Responsions, the Preliminary Science Examinations mentioned below, and the Final Honour School of Physiology. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed:—1. Preliminary subjects: Mechanics and Physics, Chemistry, Animal Morphology, and Botany. 2. Professional. (*a*) First Examination: Subjects—Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School; Human Physiology, unless he has obtained a first or second class in Animal Physiology in the Natural Science School; Human Anatomy and Materia Medica with Pharmacy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene. The approximate dates of the examinations are as follows:—Preliminaries—Mechanics, Physics, and Chemistry, December and June; Animal Morphology, December and March; Botany, March and June; Professional (First and Second B.M.), June and December.

The First Examination for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. The subjects of this examination may be presented separately or in any combination or in any order, provided Anatomy and Physiology be passed together.

The Second Examination may be passed after the completion of the first, but Pathology and Hygiene may be taken before or with the remaining subjects. Before admission to the Second Examination candidates must present certificates of attendance on a course of laboratory instruction in Practical Pathology and Bacteriology and of having acted as post-mortem clerk for three months, surgical dresser for six months, and clinical clerk for six months. Also he must produce certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, and of proficiency in the practice of Vaccination. Also in respect of the First Examination candidates must present certificates showing that they have dissected the whole body once and have attended courses of laboratory instruction in Practical Histology and Practical Physiology.

The degree of D.M. is granted to Bachelors of Medicine of the University provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The Regius Professor may direct the dissertation to be read in public. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed the M.Ch. examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

Travelling Fellowship, Scholarships, and Prizes.—The Public Health diplomas, being considered post-graduate, will be found in another column. A Radcliffe Travelling Fellowship is awarded annually after an examination held in February. It is tenable for three years and is of the annual value of £200. The stipend is paid by University College. The examination is in Physiology, Pathology, and Hygiene, and is partly "practical." Candidates must be graduates in Medicine of the University. The holder must travel abroad for the purpose of medical study. Application should be made to the Radcliffe Examiners, Radcliffe Library, University Museum. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject, including Physiology or Pathology. The Radcliffe Prize, founded by University College (1907), is of the value of £50 and is awarded biennally for research in some branch of medical science. The prize will be awarded in 1911. Candidates must send in their memoirs to the University Registry on or before Dec. 1st, 1908. No memoir for which any University prize has already been awarded is admitted to competition for the Radcliffe prize, and the prize will not be awarded more than once to the same candidate.

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1902, which contain the official schedules of the several subjects of examination in both Arts and Medicine; from the Student's Handbook to the University (all of which are published by the Clarendon Press); from the Regius Professor of Medicine; and from the Professors in the several departments of medical science.

Professors—Anthropology: E. B. Tylor, M.A. Botany (Sherard): S. H. Vines, M.A. Chemistry (Waynflete): W. Odling, M.A. Comparative Anatomy (Linacre): G. C. Bourne, D.Sc. Human Anatomy: A. Thomson, M.A. Medicine (Regius): W. Osler, D.M., Hon. D.Sc. Natural Philosophy (Sedleian): A. E. H. Love, D.Sc. Physics (Wykeham): J. S. E. Townsend, M.A. Physiology (Waynflete): F. Gotch, M.A., D.Sc. Reader: J. S. Haldane, M.A. Zoology: E. B. Poulton, M.A., D.Sc. Pathology: G. Dreyer, M.D. Lecturer: E. W. A. Walker, D.M.

In addition to the University lectures and classes the several Colleges provide their undergraduates with tuition for all examinations up to the B.A. degree.

UNIVERSITY OF OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Courses of instruction are given in connexion with the Oxford University Medical School. These include (1) a course in Practical Medicine by the Regius Professor of Medicine; (2) Clinical lectures by the Litchfield Lecturers in Medicine and Surgery; and (3) tutorial instruction and demonstrations in special Regional Anatomy (medical and surgical), methods of Medical and Surgical Diagnosis, and Surgical Manipulation. Pathological demonstrations are given in the post-mortem room at the Pathological Laboratory by the Professor of Pathology. Practical Pharmacy is taught in the Radcliffe Dispensary. Opportunities are offered to students who wish to act as surgical dressers and clinical clerks in the out-patient departments and in the wards. The Hospital contains 154 beds. Honorary Physician: Dr. E. B. Gray. Honorary Surgeon: Mr. A. Winkfield. Active Consulting Physician: Professor William Osler. Acting Staff:—Honorary Physicians: Dr. W. Tyrrell Brooks, Dr. W. Collier, and Dr. E. Mallam. Honorary Assistant Physician and Medical Registrar: Dr. A. Waters. Honorary Surgeons: Mr. Horatio P. Symonds, Mr. R. H. A. Whitelocke, and Mr. A. P. Parker. Honorary Assistant Surgeon and [illegible] vers. Consulting Oph- [illegible] Pathologist: Professor [illegible] l Surgeon: Mr. E. A. [illegible] Dr. R. H. Sankey. House Physician: Dr. G. Moore Johnson. House Surgeon: Mr. F. V. Milburn. Junior House Surgeon: Mr. M. B. Baines.

UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms (three years) by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done before coming into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board, the Oxford or Cambridge Senior Local Examinations, the London Matriculation Examination, the Scotch Education Department, Responsions at Oxford, and the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either continuing mathematical and classical study and passing the ordinary examinations for B.A. or going out in one of the Honour Triposes. The Natural Sciences Tripos is the most appropriate, as some of the subjects are practically the same as those for the first and second M.B. examinations.

For the degree of *Bachelor of Medicine* (*M.B.*) five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second, and the first part of the third, examinations for M.B. Hospital practice and many of the requisite lectures may be attended in Cambridge, and many students remain to attend lectures and hospital practice until they have passed the first part of the third examination for M.B. The supply of subjects for Dissection is abundant, and the laboratories for Pathology, Bacteriology, and Pharmacology are well equipped. Addenbrooke's Hospital provides for the necessary clinical training.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics and Elementary Biology. These parts may be taken together or separately. The *second* includes Human Anatomy and Physiology. The *third* is divided into two parts—viz, (1) Pharmacology and General Pathology; (2) Principles and Practice of Surgery, Midwifery and Diseases Peculiar to Women, Principles and Practice of Physic. The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

As Operative and Clinical Surgery now form parts of the third M.B. examination candidates who have passed both parts of that examination are admitted to the registrable degree of *Bachelor of Surgery* (*B.C.*) without separate examination and without keeping an Act.

The degree of *Doctor of Medicine* (*M.D.*) may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools with *vivâ voce* examination; and an extempore essay has to be written on some subject relating to Physiology, Pathology, the Practice of Medicine, or State Medicine.

For the degree of *Master of Surgery* (*M.C.*) the candidate must have passed all the examinations for B.C., or if he is an M.A. have obtained some other registrable qualification in surgery. He is required either (1) to pass an examination in Surgical Anatomy and Surgical Operations, Pathology, and the Principles and Practice of Surgery, and to write an extempore essay on a Surgical Subject; or (2) to submit to the Medical Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years at least must have elapsed from the time when he completed all required for the degree of B C. Before submitting original contributions he must have been qualified at least three years.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, Pharmacology, and General Pathology may be obtained upon sending a stamped directed envelope to the Registrary, Cambridge.

The Professors, Readers, and Lecturers in the various subjects are as follows. Professors—Anatomy: A. Macalister, M.D. Biology (Quick): G. H. F. Nuttall, Sc.D. Botany: A. C. Seward, M.A. Chemistry: W. J. Pope. Medicine (Downing): J. B. Bradbury, M.D. Natural Philosophy (Jacksonian): Sir James Dewar, M.A. Pathology: G. Sims Woodhead, M.A. Physic (Regius): T. Clifford Allbutt, M.D. Physiology: J. N. Langley, M.A. Surgery: F. H. Marsh, M.A. Zoology, &c.: A. Sedgwick, M.A. Readers—Botany: F. F. Blackman, M.A. Chemical Physiology: F. G. Hopkins, M.A., and A. E. Shipley, M.A. Lecturers—Physics: G. F. C. Searle, M.A., and C. T. R. Wilson, M.A. Botany: A. G. Tansley, M.A. Chemistry: Dr. Sell and Dr. Fenton. Organic Chemistry: S. Ruhemann, M.A. Advanced Morphology of Vertebrates: H. Gadow, M.A. Advanced Morphology of Invertebrates: A. E. Shipley, M A. Advanced Physiology: W. H. Gaskell, M.D., and L. E Shore, M.D. Physiology: H. K. Anderson, M.D. Physiological and Experimental Psychology: W. H. Rivers, M.A. Medical Jurisprudence: B. Anningson, M.D. Medicine: L. Humphry, M.D. Midwifery: A. C. Ingle, M.D. Surgery: G. E. Wherry, M.A., F.R C.S. Pathology (Huddersfield): T. S. P. Strangeways, M.A. Physiological Anthropology: W. L. H. Duckworth, M.D.

University Prize in Medicine.—There is only one University Prize in Medicine. The *Raymond Horton Smith Prize* (value £19) is awarded to that candidate for the degree of M.D. who presents the best thesis for the degree during the academical year, provided that he has taken honours in a tripos examination. Medical Studies are endowed by the numerous Natural Science scholarships at the various colleges, information about which can be obtained from the respective Deans.

Tropical Medicine and Hygiene.—Information on these subjects is given on p. 667 under the section on Public Health.

ADDENBROOKE'S HOSPITAL.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are delivered at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery in the wards and out-patients' rooms is given by the physicians and surgeons daily, during the vacations as well as term time. Instruction is also given in the special methods of medical and surgical investigation. Clinical Clerks and Dressers are selected from students according to merit. The fee for pupilship is 3 guineas a term's course. Consulting Physician: Dr. P. W. Latham and Dr. D. MacAlister. Consulting Surgeon: Mr. G. Wallis. Physicians: Sir T. C. Allbutt, Dr. J. B. Bradbury, and Dr. L. Humphry. Assistant Physicians: Dr. E Lloyd Jones and Dr. J. A. Wright. Surgeons: Mr. G. Wallis, Mr. G. E. Wherry, Mr. F. Deighton, Mr. J. Griffiths, and Mr. F. H. Marsh. Assistant Surgeon: Mr. Cooke. Consulting Dental Surgeon: Mr. W. A. Rhodes. Dental Surgeons: Mr. A. Jones and Mr. C. F. Rumsey. Honorary Anæsthetists: Mr. G. S. Haynes and Mr. G. F. Rogers.

UNIVERSITY OF LONDON.

The University of London was established by Royal Charter in 1836 as a purely examining and degree conferring body with several affiliated colleges but no direct teaching functions. In 1900 it was reconstituted under the Act of Parliament 1898 and became a teaching as well as an examining body. Many schools already existing became constituent colleges, including all the metropolitan medical schools. It also appoints teachers in special subjects to give lectures at the University, and the question of a further centralisation of preliminary scientific studies has for some years occupied the very serious attention of the University and its constituent schools but is for the present in abeyance. A considerable sum of money was offered for the erection and equipment of an institute of medical sciences as a central school of the University, but unfortunately, as we think, a division of opinion in the Faculty of Medicine forced the University to abandon the project.

The medical degrees awarded by the University are those of M.D., M.S., and M.B., B.S., the two latter being now given together as a graduating degree, whereas formerly the M.B. alone was a qualifying degree and the B.S. was taken optionally as a separate examination. The medical degrees of the University of London are granted to both internal and external students, the former being students of the constituent schools and colleges of the University.

Teaching Staff.—The teaching staff of the University is organised under two heads: 1. Appointed teachers—i.e., such as are appointed by, and are paid out of the funds of, the University. 2. Recognised teachers—i.e., those who have been appointed and are paid by the several schools of the University and other institutions at which instruction is given under the auspices of the University, and who have been recognised by the Senate as conducting work of University standard. Courses by non-recognised teachers may also be approved in schools of the University. Thus in the Faculty of Medicine, although there are at present no appointed teachers, there are 401 recognised teachers belonging to the various metropolitan medical schools. There are 212 recognised teachers in the Faculty of Science. The lecturers in the Medical Sciences and the professors in the Faculties of Medicine in University College, London, and King's College, London, will be found enumerated under their respective medical schools.

Internal and External Students.—Matriculated students of the University may be either internal or external. Internal students of the University are students who have matriculated at the University and who are pursuing a course of study approved by the University, either (*a*) under the direct control of the University or a committee appointed thereby, or in one or more of the schools of the University; or (*b*) under one or more of the appointed or recognised teachers of the University. Centres for preliminary and intermediate medical studies have been established by the University at University and King's Colleges. Internal students must pursue their studies at one of the above centres, or at one of the medical schools connected with the University. These are University College Hospital, King's College Hospital, St. Bartholomew's Hospital, the London Hospital, Guy's Hospital, St. Thomas's Hospital, St. George's Hospital, the Middlesex Hospital, St. Mary's Hospital, Charing Cross Hospital, Westminster Hospital, and the London (Royal Free Hospital) School of Medicine for Women. The London School of Tropical Medicine and the Lister Institute of Preventive Medicine are also recognised as schools of the University in special departments. External students are all other matriculated students.

The Matriculation Examination—Students before being admitted to the University must either (1) have passed the Matriculation or the School Examination (Matriculation or Higher Standard), or (2) have been exempted therefrom under Statute 116 of the University which recognises certain other examinations in its lieu. Such exemption is granted to graduates of British and certain colonial universities, and under certain conditions to matriculated students of the Universities of Machester, Liverpool, Leeds, and Sheffield, to holders of the senior local certificates of the Universities of Oxford and Cambridge, the higher certificate of the Oxford and Cambridge Schools Examination Board, the Scotch school-leaving certificate, the senior grade certificate of the Intermediate Examination Board for Ireland, and to students who have passed their previous examination at Cambridge. The examinations for matriculation take place three times in each year—namely, on Sept. 15th (if that day be a Monday, or if not, on the Monday next preceding the 15th), on the second Monday in January, and on the second Monday in June (or July, as may be hereafter determined). The examinations in January and June (or July), but not that in September, may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the colonies. (Neither Botany nor Drawing can be chosen for subjects in the Colonies.) It is noteworthy that the September examination affords an opportunity for prospective medical students who may have failed at the midsummer examination to pass the Matriculation in time to enter upon their medical course in October. Students who pass the January Matriculation are able to enter for the First Examination for Medical Degrees in the following July under certain conditions in the case of internal students. Every candidate must, on or before August 20th for the September examination, on or before Nov. 25th for the January examination, and on or before April 25th for the June (or July) examination, apply by postcard to the Principal for a form of entry, of which the first in order must be returned 14 days before the commencement of the September examination, the second on or before Dec. 1st, and the third on or before May 1st, accompanied in the same cover by a certificate showing that the candidate has completed his sixteenth year, and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, or a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate if of full age, will be accepted. As candidates cannot be admitted after the list is closed, any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Principal, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2. If he withdraws his name before the last day of entry it shall be returned to him. If he fails to present himself he shall be allowed to enter for a subsequent Matriculation within eight months on payment of £1. If he retires after the commencement of the examination or fails to pass it the full fee of £2 shall be payable on every re-entry. Candidates must show a competent knowledge of each of the following five subjects, according to the details specified: 1. English—Composition, Précis-writing, salient facts in English History and Geography. A subject for an essay, to be chosen by candidates, to test power of expression, thought, and arrangement and general knowledge. 2. Elementary Mathematics—Arithmetic, Algebra (including quadratic equations and graphs of simple functions), and the subjects of Euclid (Books I. to IV). 3. Latin, or Elementary Mechanics, or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry, or Elementary Botany. 4 and 5. Two of the following subjects, neither of which has been taken under Section 3 (if Latin be not taken, one of the other subjects must be another language from the list): Latin, Greek, French, German, Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced), Elementary Mechanics, Elementary Chemistry, Elementary Physics (Heat, Light, and Sound), Elementary Physics (Electricity and Magnetism), and Botany. Additional subjects, of which, however, candidates must give notice two months previous to the examination, are: Arabic, Sanskrit, Spanish, Portuguese, Italian, Hebrew, Chinese, Modern Dutch, and Zoology. A pass certificate signed by the Principal is delivered to each successful candidate after the report of the examiners shall have been approved by the Senate.

Provincial Examinations for Matriculation.—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations, and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Principal of the University, who will then make all necessary arrangements. Besides the

University fee, a fee usually varying from £1 to £3 is charged by the local authorities and must be paid *at the local centre* immediately before the commencement of the several examinations.

Faculty of Medicine.—The Faculty of Medicine grants the joint degrees of M.B., B.S. (*Bachelor of Medicine and Surgery*), and the higher separate degrees of M.D. (*Doctor of Medicine*) and M.S. (*Master of Surgery*).

It is noteworthy that the curriculum for the medical degrees has recently been extended from five to five and a half years from the time of matriculation, except in the case of students who have passed the Preliminary Scientific Examination or the First Examination for Medical Degrees before July, 1910, and that the examinations formerly known as the Preliminary Scientific, the Intermediate, and the Final Examination in Medicine are now respectively entitled the First, Second, and Third Examinations for Medical Degrees. Part II. of the former Preliminary Scientific Examination has now been made Part I. of the Second Examination.

A. *Internal Students.*—In order to be admitted to the Bachelor's degrees a student must normally, after registration as an internal student, have: (1) Attended prescribed courses of study for five and a half years in one or more schools of the University. (2) Passed the following examinations, under the conditions mentioned below: (*a*) The First Examination for Medical Degrees in Inorganic Chemistry, Physics, and General Biology; (*b*) the Second Examination for Medical Degrees: Pa [illegible] Chemistry; Part II., Anatomy, [illegible] cology, including Pharmacy and [illegible] Third Examination for Medical Degrees, or M.B., B.S. Examination in Medicine, including Therapeutics and Mental Diseases, Surgery, Midwifery and Diseases of Wom[illegible]

B. [illegible] Bachelor's degre[illegible] the Matriculation examination or have been exempted therefrom under Statute 116 not less than five and a half years previously; (2) have passed subsequent examinations similar to those required of an internal student; and (3) have been engaged in professional studies during the five and a half years subsequently to Matriculation and four and a half years subsequently to passing the First Examination for Professional Degrees at one or more of the medical institutions or schools recognised by this University for the purpose, one year at least of the four and a half years to have been spent in one or more of the recognised institutions or schools in the United Kingdom.

The First Examination for Medical Degrees (*Inorganic Chemistry, Physics, and General Biology*) will take place twice in each year, commencing on the Monday following December 10th and on the second Monday in July. It must as a rule be passed by internal students not less than one academic year after matriculation and by external students not less than nine months after matriculation. Candidates, however, who have passed or been admitted under Statute 116 as exempt from matriculation in the preceding January will be admitted to the first examination for medical degrees in July as external students, or as internal students if they have attended the prescribed course of study throughout the session and obtained the consent of the authorities of their school or institution. Every candidate must apply (internal students to the academic registrar and external students to the external registrar) for a Form of Entry on or before Nov. 1st or May 24th, which must be returned, accompanied by the proper fee, not later than Nov. 8th for the December examination or June 1st for the July examination. The fee is £5 for each entry to the whole examination, provided that all the subjects are taken at one time. When less than the whole examination is taken at one time it is £2 for each subject. The examination will include two papers in each of the three subjects, three hours being allowed for each paper. Three hours each will be devoted to practical examinations in Inorganic Chemistry and Physics and six hours to a practical examination in General Biology. *Candidates must, at their first entry, present themselves in all three subjects.* Candidates failing in one subject only may, with permission, present themselves for re-examination in that subject on payment of the proper fee.

The Second Examination for Medical Degrees (Part I.): Organic Chemistry.—This examination will take place twice in each year, commencing on the Thursdays following the third Monday in March and the second Monday in July. No candidate will be admitted to this examination within six months of having passed the First Examination. Every candidate must apply on or before Feb. 8th or May 24th for a form of entry, which must be returned not later than Feb. 15th for the March examination or June 1st for the July examination. The fee is £2 for the first and every subsequent entry. The examination will consist of a paper and practical work, and may include oral questions in Organic Chemistry, which is "to be treated in an elementary manner, and with special regard to its applications in physiology, pharmacology, and pathology."

The Second Examination for Medical Degrees (*Part II.*) takes place twice in every year, commencing on the third Monday in March and on the first Monday in July. The subjects of the examination are Human Anatomy and Embryology, Physiology, and Pharmacology, including Pharmacy and Materia Medica. No candidate shall be admitted to the examination unless he has passed the First Examination for Medical Degrees at least 18 months previously, and has passed Part I. of the Second Examination for Medical Degrees. Internal students must have completed the courses of study prescribed for them by the University, and external students must produce certificates of having subsequently to having passed the First Examination for Medical Degrees been students during one and a half academic years at one or more of the medical institutions or schools recognised by the University and of having attended (1) a course of not less than 100 lectures and demonstrations on Human Anatomy; (2) a course of Dissections for not less than 12 months; (3) a course of not less than 60 lectures on Physiology; (4) adequate courses of Experimental Physiology, Histology, and Physiological Chemistry; (5) adequate courses of lectures and demonstrations on Pharmacology, Pharmacy, and Materia Medica; and (6) Practical Pharmacy for not less than two months. These certificates must be transmitted to the Registrar at least not later than Feb. 15th or June 1st for the March and July examinations respectively, applications for forms of entry having been made by Feb. 1st or May 17th. The fee for each entry to the whole examination is £8. For re-examination in one subject it is £4.

M.B., B.S. Examination.—The M.B., B.S. examination takes place twice in each year, commencing on the last Monday in October and on the first Monday in May. No candidate except those who pass the Preliminary Science or First Examination for Medical Degrees before July, 1910, will be admitted to this examination within three academic years from the date of passing in Anatomy and Physiology at the Second Examination (Part II.), nor unless he has completed that examination together with prescribed courses of study or practice summarised below. (1) Principles and Practice of Medicine; (2) Clinical Methods and Physical Diagnosis; (3) Insanity (with clinical demonstrations at a recognised Asylum); (4) Therapeutics; (5) Vaccination; (6) Principles and P[illegible] Surgical Anatomy[illegible] of Anæsthetics; [illegible] (9) Lectures and Demonstrations on Midwifery and Diseases of Women; (10) Practical Midwifery, the conduct of at least 20 Labours, and practice as a Clinical clerk in Gynæcological work; (11) Pathology and Bacteriology; (12) work of the Post-mortem room; (13) Forensic Medicine; and (14) Hygiene. He must also have attended the Medical and Surgical practice of a recognised hospital for two years and a course of instruction at a recognised Fever Hospital for two months. He must have had clinical instruction and must have held the posts of medical clinical clerk and surgical dresser for periods of six months each. For internal students the above form the subjects of the last two and a half years of study as prescribed by the University. Forms of entry for the examination must be applied for on or before Sept. 21st or March 24th and returned with certificates of having undertaken the above-mentioned courses of study by Sept. 28th or April 1st respectively. Candidates will be examined in Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, Midwifery, and Diseases of Women. The subjects may be divided into two groups—namely: (1) Medicine, Pathology, Forensic Medicine, and Hygiene; and (2) Surgery, Midwifery and Diseases of Women. These groups may be taken either separately or together. The fee is £10 for each entry to the whole examination and £5 for examination or re-examination in either group. There will be no separate examination held for Honours, but the list of candidates who have passed will be published in two parts—namely, an Honours list and a Pass list. Bachelors of Medicine of this University who graduated in or before May, 1904, may obtain the B.S. degree by passing the Surgical part of the M.B., B.S. examination.

Doctor of Medicine.—The examination for this degree takes place twice in each year, commencing on the first Monday in December and on the first Monday in July. Candidates must have taken the degrees of M.B., B.S. not less than two years previously, but for those who have taken the M.B., B.S. degrees with honours or have done certain original work this period of delay may be reduced to one year. Candidates who have obtained their M.B. degrees in or before May, 1904, will not be required to hold the degree of B.S. before seeking the doctorate. They may present themselves for examination in one of the following branches, namely: (1) Medicine; (2) Pathology; (3) Mental Diseases; (4) Midwifery and Diseases of Women; (5) State Medicine; and (6) Tropical Medicine. In most branches an appointment at an approved hospital is necessary. Certain conditions have to be fulfilled in each case, varying according to the nature of the branch in question. Candidates who have passed or presented themselves for the M.D. examination in one branch may present themselves for examination in another branch at a subsequent examination. Any candidate for the degree of M.D. may transmit to the Registrar, not less than two months before the commencement of the examination, a thesis or published work having definite relation to the branch of Medicine in which he is a candidate, and if the thesis be approved by the examiners the candidate may be exempted from the written examination in that subject. The fee is £20, and for re-examination £10.

Note.—In and after the session 1910–11 with regard to the regulations for internal and external students in the Faculty of Medicine the following will apply. In Branches I. and IV. candidates (other than those who present a thesis) for the July examination must apply to the Academic or External Registrar for forms of entry on or before May 20th, which must be returned not later than June 1st, and candidates (other than those who present a thesis) for the December examination must apply for forms of entry on or before Oct. 20th, which must be returned not later than Nov. 1st. The corresponding dates for application for, and return of, forms of entry for candidates in Branches II., III., V., and VI., and candidates in other branches who present a thesis, are April 20th and May 1st for the July examination; and Sept. 20th and Oct. 1st for the December examination. Forms of entry must be returned duly filled up, accompanied by the proper fee, and by certificates, as enumerated below, for the branch concerned.

Master in Surgery.—The examination for the degree of Master in Surgery takes place twice in each year and commences on the first Monday in December and on the first Monday in July. Candidates must produce certificates of having taken the degrees of M.B. and B.S. not less than two years previously (with certain exemptions, as in the examination for the M.D.) and of having subsequently held for at least six months a resident or non-resident Surgical hospital appointment. The examination is conducted by means of printed papers and *vivâ-voce* interrogation, and the subjects are Surgery, Surgical Pathology and Anatomy, a Clinical examination, and operations on the dead body. Any candidate for the degree of M.S. may transmit to the Registrar, not later than two months before the commencement of the examination, a thesis or published work having definite relation to Surgery, and if the thesis be approved by the examiners the candidate may be exempted from the written examination in Surgery. The fee is £20, and for re-examination £10.

Full details of the prescribed curricula of study, with the syllabus for each examination and of certain exemptions which the Senate has power to grant in respect to certain examinations and the courses of study presented for them, and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S.W. Students should apply direct to the University for this detailed information.

MEDICAL SCHOOLS OF THE UNIVERSITY OF LONDON.[1]

ST. BARTHOLOMEW'S HOSPITAL.—The clinical practice of the hospital is large. The hospital contains 744 beds, of which 674 are for patients in the hospital at Smithfield and 70 for convalescent patients at Swanley.

This hospital receives within its walls more than 7000 in-patients annually and its out-patients and casualties amount to more than 126,000 annually.

Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery in which Chief Assistants and Clinical Assistants are appointed annually. There is an Electrical Department, including X Ray, &c. Surgical operations take place every day at 1.30 P.M. and Surgical Consultations are held on Thursdays at the same hour. Medical Consultations are held on Thursdays at 3.15 P.M. The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions. Clinical Lectures on all special subjects are also given. The visits of the physicians and surgeons are made at 1.30.

Ten house physicians and ten house surgeons are appointed annually. During their first six months of office they act as "junior" house physicians and house surgeons and receive a salary of £25 a year. During their second six months they become "senior" house physicians and house surgeons and are provided with rooms by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant of an ophthalmic house surgeon and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two assistant anæsthetists are appointed annually, and receive salaries of £120 and £100 respectively, with rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. All the appointments are now free. A residential college is attached to the hospital.

New Buildings.—The new buildings that have been recently opened comprise residential quarters for the resident staff, new casualty, medical, surgical, and special out-patient departments, new casualty wards, dispensary, and clinical lecture theatre. A new chemical laboratory has been added, available for the Medical School, and affording facilities for instruction in Public Health. A second new Block which is devoted to Pathology, and contains extensive laboratories for bacteriology, clinical pathology, pathological histology, &c., was opened in May, 1909.

The Medical School Buildings include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

Special Classes for the Final F.R.C.S. are held twice yearly.

Instruction in Preliminary Science is given to University of London students in chemistry, biology, and physics throughout the year.

Laboratory Instruction for the D.P.H. is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join. Additional rooms for the Students' Union have recently been added, viz.: (*a*) a large reading and smoking room; (*b*) a committee and writing room; and (*c*) luncheon and dining hall; and a miniature rifle range has been provided. These are in the new block.

Staff.—Consulting Physicians: Sir William S. Church, Bart., K.C.B., Dr. Hensley, Sir Lauder Brunton, Bart., F.R.S., Dr. Gee, and Sir Dyce Duckworth, Bart. Consulting Surgeons: Sir Thomas Smith, Bart., K.C.V.O., Mr. Willett,

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[1] For Ancillary Metropolitan Medical Schools see p. 626.

Mr. Butlin, *Professor Marsh*, and Mr. Langton. Consulting Ophthalmic Surgeon: Mr. Henry Power. Consulting Aural Surgeon: Mr. Cumberbatch. Physicians: Dr. Norman Moore, Dr. Samuel West, Dr. Ormerod, Dr. Herringham, and Dr. Tooth, C.M.G. Surgeons: Mr. Harrison Cripps, Mr. Bruce Clarke, Mr. Anthony Bowlby, C.M.G., Mr. Lockwood, and Mr. D'Arcy Power. Assistant Physicians: Dr. Garrod, Dr. Calvert, Dr. Morley Fletcher, Dr. *Drysdale, and Dr. Horton-Smith-Hartley, M.V.O.* Assistant Surgeons: Mr. Waring, Mr. Eccles, Mr. Bailey, Mr. Rawling, and Mr. Gask. Physician Accoucheur: Dr. Champneys. Physician Accoucheur with charge of out-patients: Dr. W. S. A. Griffith. Surgeon to Obstetric Wards: Mr. Harrison Cripps. Assistant Physician Accoucheur: Dr. Williamson. Ophthalmic Surgeons: Mr. Jessop and Mr. Holmes Spicer. Surgeon, Throat and Nose Department: Mr. W. D. Harmer. Assistant Surgeon, Throat and Nose Department: Mr. F. A. Rose Aural Surgeon: Mr. Ernest West. Assistant Aural Surgeon: Mr. Sydney Scott. Dental Surgeons: Mr. Paterson and Mr. Ackland. Assistant Dental Surgeons: Dr. Austen and Mr. Coleman. Medical Officer in charge of Electrical Department: Dr. Lewis Jones. Assistant Medical Officer to Electrical Department: Dr. H. Walsham. Pathologist: Dr. Andrewes. Assistant Pathologist: Dr. H. M. Gordon. Administrators of Anæsthetics: Mr. Gill and Mr. Cross. Assistant Administrators of Anæsthetics: Mr. Boyle and Mr. Trewby. Medical Registrars: *Dr. Horder and Dr. Langdon Brown.* Surgical Registrar: Mr. Gordon Watson. Casualty Physicians: Dr. Haldin Davis and Dr. Woodwark.

Lectures and Demonstrations.—Medicine: Dr. Norman Moore and Dr. S. West. Clinical Medicine: Dr. Norman Moore, Dr. S. West, Dr. J. A. Ormerod, Dr. W. P. Herringham, and Dr. H. H. Tooth. Practical Medicine: Dr. J. H. Drysdale and Dr. Horton-Smith-Hartley. Surgery: Mr. W. Bruce Clarke and Mr. D'Arcy Power. Clinical Surgery: Mr. Harrison Cripps, Mr. W. Bruce Clarke, Mr. Anthony Bowlby, Mr. C. B. Lockwood, and Mr. D'Arcy Power. Practical Surgery: Mr. L. B. Rawling and Mr. G. E. Gask. Operative Surgery: Mr. W. McAdam Eccles, Mr. L. B. Rawling, and Mr. G. E. Gask. Midwifery and the Diseases of Women and Children: Dr. F. H. Champneys and Dr. W. S. A. Griffith. Practical Midwifery: Dr. J. D. Barris. Pathology: Dr. F. W. Andrewes. Bacteriology (advanced): Dr. E. E. Klein. Chemical Pathology: Dr. A. E. Garrod. Morbid Anatomy and Post Mortems: Dr. T. J. Horder, Dr. Langdon Brown, and Mr. Watson. Practical Pathology: Dr. H. Thursfield, Mr. R. C. Elmslie, Dr. Pritchard, *Mr. W. G. Ball, Mr. Jamison, and Mr. Walker.* Ophthalmic Medicine and Surgery: Mr. W. H. Jessop. *Diseases of the Eye: Mr. W. H. Jessop* and Mr. W. Holmes [illegible] Spicer. [illegible] Scott. [illegible] Mr. F. E. Rose. Orthopædic Surgery: Mr. W. McAdam Eccles. Diseases of the Skin: Dr. H. G. Adamson. Diseases of Children: *Dr. A. E. Garrod* and Dr. H. Morley Fletcher. Medical Electr[illegible] Dr. H. Lewis Jones and Dr. [illegible] Insanity: Dr. R. Jones. [illegible] and Mr. R. O. Ackland. [illegible] Cross, Mr. H. E. G. Bo[illegible] Medicine: Dr. W. P. Herringham. Descriptive and Surgical Anatomy: Dr. C. Addison. Practical Anatomy: Dr. C. Addison, Mr. R. B[illegible] and Mr. R. F. Moo[illegible] J. S. Edkins. Pra[illegible] W. L[illegible] [illegible]peutics: Dr. James Calvert. [illegible]idge. Biology and Comparative Anatomy: Dr. [illegible] Shore. Practical Biology: Dr. T. W. Shore and Dr. W. A. Cunnington. Chemistry: Dr. W. H. Hurtley. Practical Chemistry: Dr. W. H. Hurtley and Mr. K. S. Caldwell. Physics: Mr. F. Womack. Practical Physics: Mr. F. Womack and Mr. Lloyd Hopwood. Botany: Rev. G. Henslow. Public Health: Dr. George Newman. Sanitary Law: Dr. G. Newman and Dr. R. Porter. Museum Curator: Dr. F. W. Andrewes. Junior Curator: Dr. W. P. S. Branson. Dean of the School: Dr. T. W. Shore. Warden of College: Mr. G. E. Gask.

Scholarships given in aid of [illegible] various Scholarships, *prizes,* [illegible] the following list having a h[illegible] also other prizes and medals on a lower scale of value. For *five of the Scholarships and the Exhibition—namely,* (a), (b), (c), three Entrance Scholarships of the respective values of £75, £75, and £150; (d) Entrance Scholarship in Arts, £100; (e) Jeaffreson Exhibition, £50; and (f) Shuter Scholarship, *£50*—a *full* or University course at St. Bartholomew's Hospital is required. The awards of (a), (b), and (c) are made after examination in selections from the subjects of [illegible] and Anatom[illegible] Latin, Mat[illegible] is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology. For the remaining Scholarships and prizes study at St. Bartholomew's Hospital is required. These remaining Scholarships and prizes, with the money value and the subjects of examination, are as follows:—Four Junior Scholarships: (g) No. 1, £30, Anatomy and Biology; (h) No. 2, £20, Anatomy and Biology; (i) No. 3, £25, Chemistry, Physics, and Histology; (j) No. 4, £15, Chemistry, Physics, and Histology; (k) Senior [illegible] and Chemistry; [illegible] Clinical Medicine; [illegible] £39 each, one i[illegible]rence Scholarship, £45 and medal, Surgery, Medicine, and Midwifery; (p) Sir Geo. Burro[illegible] (q) Skynner Prize, 13 guin[illegible] Anatomy; (r) Matthews Dun[illegible] Midwifery and Gynæcology; and (s) Luther Holden Research Scholarship in Surgery, awarded by election, £105.

CHARING CROSS HOSPITAL.—This hospital and convalescent home contain 200 beds, a certain proportion of which are set aside for the diseases of children and *those special to women.* The number of patients treated during 1908 amounted to 25,404—viz., 2178 in-patients and 23,226 out-patients, of [illegible] were 75,477 out-patient [illegible] appointments are open [illegible] *House Physicians,* six House Surgeons, and two Resident Obstetric Officers, appointed each year on the recommendation of the committee after competitive examinations, are provided with board and residence in the hospital. Clinical *clerks and dressers are appointed in all* the general and special departments of the hospital. Arrangements can be made *for students* who have not entered for the entire curriculum to hold these posts. In the medical school demonstratorships and assistant demonstratorships in various subjects are open to students of the school and carry honoraria. Total fees, including students' club:—For general students: 1. Composition fee, payable in one sum on joining, 115 guineas. 2 Sessional payment system: Entrance fee, 10 guineas. In addition a sum of *15 guineas* must be paid at the beginning of every Winter Session and one of 10 guineas at the beginning of every Summer Session so long as the student remains in the school. For Dental students: The fees for the two years' curriculum required by dental students may be paid: (a) in one sum of 55 guineas on entry; (b) in two instalments, one of 31 guineas on entry and the second of 30 guineas at the end of the first twelve months. General students pay proportionally lower fees and are admitted without additional fee to the courses of Clinical Medicine and Surgery. They are entitled to compete for the Scholarships which are awarded annually to the value of £500, including two University Scholarships, value 50 guineas and 40 guineas respectively, Gold Medal, Huxley, Livingstone, Travers, and Pereira Prizes.

Classes for the First and Second Examinations for Medical Degrees, Parts I. and II. of the University of London and for the Primary F.R.C.S. are held at this Medical School. There are *also special classes for the* practical work for the Department of Public Health and for the Primary F.R.C.S.

Staff.—Consulting Physicians: Dr. Green, Dr. Bruce, and Dr. Abercrombie. Consulting Obstetric Physician: Dr. J. Watt Blac[illegible] Dr. Mott, Dr. Galloway, and [illegible] Dr. Dr. Hunte[illegible] [illegible]lting Fenton, D[illegible] V.O. Surgeons: [illegible] Sur- Surgeons: [illegible] Mr. geon to Out-patients [illegible]

Clogg and Mr. Daniel. Obstetric Physician: Dr. Amand Routh. Obstetric Physician with care of Out-patients: Dr. T. W. Eden. Physician for Diseases of the Skin: Dr. Galloway. Assistant Physician for Diseases of the Skin: Dr. MacLeod. Physician to the Electrical Department: Dr. Ironside Bruce. Surgeon for Nose, Throat, and Ear: Mr. Waggett. Ophthalmic Surgeon: Mr. Treacher Collins. Orthopædic Surgeon: Mr. Fairbank. Surgeon Dentist: Mr. J. F. Colyer. Physician for Mental Diseases: Dr. Mercier.

Lecturers: Winter Session.—Anatomy: Dr. Alexander Macphail. Bacteriology: Mr. Leathem. Biology and Comparative Anatomy: Dr. H. W. Marett Tims. Chemistry and Physics: Dr. H. Forster Morley. Dental Surgery: Mr. J. F. Colyer. Medicine: Dr. James Galloway and Dr. F. W. Mott (Nervous Diseases). Ophthalmology: Mr. E. Treacher Collins. Physiology and Histology: Mr. O. F. Myers-Ward. Practical Anæsthetics: Mr. C. Carter Braine. Practical Anatomy: Dr. Alexander Macphail. Practical Hygiene: Mr. Leathem and Dr. H. Forster Morley. Practical Medicine: Dr. Bosanquet and Dr. Forsyth. Diseases of Women: Dr. Amand Routh and Dr. T. W. Eden. Practical Midwifery: Dr. T. W. Eden. Practical Physiology: Mr. O. F. Myers-Ward. Practical Surgery: Mr. F. C. Wallis, Mr. H. S. Clogg, Mr. Peter Daniel, and Mr. Fairbank. Operative Surgery: Mr. Charles Gibbs. Psychological Medicine: Dr. Mercier. Surgery: Mr. H. F. Waterhouse and Mr. F. C. Wallis. Tropical Medicine: Sir Patrick Manson, K.C M.G.

Summer Session.—Anatomy: Dr. Alexander Macphail. Anæsthetics: Mr. C. Carter Braine. Dental Surgery: Mr. J. F. Colyer. Forensic Medicine: Dr. Jewesbury. Materia Medica and Practical Pharmacy: Dr. Fenton. Midwifery: Dr. Amand Routh. Diseases of Women: Dr. Amand Routh and Dr. T. W. Eden. Pathology: Dr. W. Hunter. Pharmacology and Therapeutics: Dr. Fenton. Practical Chemistry: Dr. H. Forster Morley. Practical Medicine: Dr. Bosanquet and Dr. Forsyth. Practical Physiology: Mr. O. F. Myers-Ward. Public Health: Dr. H. T. Bulstrode. Toxicology: Dr. H. Forster Morley. Roentgen Ray: Dr. Ironside Bruce. Dean of the Medical School: Mr. Frederick C. Wallis.

Scholarships and Prizes.—At this school five Entrance Scholarships are awarded at the commencement of each Winter Session after examination in the following groups of subjects:—(1) English, including English Language and Literature, English History with alternative questions on the history of the British Empire, and Geography; (2) Latin and any one of the following three languages—Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry: with Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and any three of the following branches of Experimental Physics—Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. A candidate may offer himself for examination in not more than three of the above groups of subjects, but Group (1) must be one of the three. The designations, money value, and conditions of the Entrance Scholarships are as follows:—(*a*) Livingstone, 75 guineas, open to all general students; (*b*) Huxley, 50 guineas, for sons of medical men; (*c*) 30 guineas, for dental students; (*d*) and (*e*), 30 and 20 guineas respectively, open to all general students. The remaining scholarships and prizes are as follows:—(*f*) Epsom Scholarship, open to Epsom Foundation Scholars who have passed the First Examination for Medical Degrees of the University of London (free education); (*g*) and (*h*) two Universities Scholarships awarded after examination in Anatomy and Physiology, including Histology, 50 and 40 guineas respectively; open to Oxford students who have passed the first M.B. Examination, or Cambridge students who have passed the second M.B. Examination, or London students who have passed the Intermediate Examination in Medicine and have not entered at any London Medical School; (*i*) Llewellyn Scholarship, awarded annually to the student of not more than five years' standing who has been most distinguished at the Prize Examinations in Medicine, Surgery, Midwifery, Pathology, Therapeutics, Forensic Medicine, Public Health, Psychological Medicine, Ophthalmology, and Practical Midwifery, £25; (*j*) Huxley Prize, awarded after Examination in Anatomy and Physiology at the end of the Second Winter Session, £3 3*s.*; (*k*) Golding Prize, awarded after competition among First-year Students in Anatomy and Physiology who have attended the classes in each subject at this school, £2 2*s.*; (*l*) Dr. T. H. Green Prize for Clinical Medicine, given annually for a special subject involving clinical observation in the wards or laboratory, 5 guineas; and (*m*) Dr. William Travers Prize for the student in the fifth year who is most proficient in Obstetrics and Gynæcology, £15. The Pereira Prize, £4 4*s.*, for the best reports with commentary on six cases that have been in the wards of the hospital during the preceding 12 months, for Students who have attended the clinical teaching of the Hospital for at least 12 months.

ST. GEORGE'S HOSPITAL.—This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon. One ward is set apart for Diseases Peculiar to Women. Children's beds are placed in all the women's wards. Two wards are allotted to ophthalmic cases.

The Winter Session commences on Oct. 1st but students can enter at any time or for any particular course. The Hospital and Medical School are situated at Hyde Park-corner and are readily accessible from all parts of London. Entrance Scholarships in Science and Arts and University Scholarships in Anatomy and Physiology are awarded at the commencement of each Winter Session. Prizes: The William Brown Exhibition of £100 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital. As the scientific and clinical parts of the medical student's curriculum are entirely separate there is no longer any object in conducting the scientific courses upon hospital premises. The entire teaching and laboratories are therefore now devoted to purely clinical subjects, as in other universities, to the great advantage of students in their fourth and fifth years of study. Arrangements have been made with the University of London for students who enter during the first, second, or third year of the curriculum as students of St. George's to carry out the necessary courses of instruction at either University College or King's College. Students therefore have the unrivalled advantages of the lectures and practical classes of these Colleges of the University during the preliminary and intermediate portions of their studies, and then complete their course, without payment of any entrance fee, in a school entirely devoted to Clinical work. Students are permitted to enter the wards of the hospital at any hour. Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. Eight house physicians and eight house surgeons are appointed annually. All house appointments are open without fee to every perpetual student of the hospital and are made strictly in accordance with the merits of the candidates. Special attention is directed to the following paid appointments, amongst others, which are open to students after they have held house office:—Medical Registrarship at £200 per annum; Surgical Registrarship at £200; Curatorship of the Museum at £200; Assistant Curatorship at £100; Obstetric Assistantship (Resident) at £50; the post of Resident Anæsthetist at £100; the post of Senior Anæsthetist at £50; the posts (2) of Junior Anæsthetists, each at £30. Great attention is paid by members of the staff to individual teaching. A number of special courses are given in which the requirements of university and other examinations receive careful attention. The following may be cited as examples:—(1) Elementary Bacteriology; (2) Advanced Bacteriology; (3) Clinical Pathology; (4) Systematic Pathology; (5) Histological Pathology and Morbid Anatomy; (6) Pharmacology; (7) Surgical Anatomy; (8) Advanced Anatomy and Physiology; (9) Operative Surgery; (10) Public Health; and (11) Tropical Diseases. Special classes are held by members of the staff for all examinations. The school possesses an Amalgamation Club, with well-fitted reading-, smoking-, and luncheon-rooms on the hospital premises. Students have the advantage of a complete library of medical and scientific books which is kept up-to-date. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean. Further information may be obtained from the Dean of the Medical School.

Staff.—Consulting Physicians: Dr. W. H. Dickinson, Dr. T. T. Whipham, Sir Isambard Owen, and Dr. Ewart. Consulting Surgeons: Mr. Pick, Mr. Haward, Sir W. Bennett, and Mr. Marmaduke Sheild. Consulting

Ophthalmic Surgeons: Mr. Brudenell Carter and Mr. Adams Frost. Consulting Aural Surgeon: Sir William Dalby. Consulting Dental Surgeon: Mr. Winterbottom. Physicians: Dr. H. D. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Obstetric Physician: Dr. W. R. Dakin. Assistant Physicians: Dr. Spriggs, Dr. Jex-Blake, and Dr. Golla. Assistant Obstetric Physician: Dr. A. F. Stabb. Physician to the Skin Department: Dr. W. S. Fox. Physician Anæsthetist: Dr. F. Hewitt. Surgeons: Mr. C. T. Dent, Mr. G. R. Turner, Mr. F. Jaffrey, and Mr. Pendlebury. Ophthalmic Surgeon: Mr. H. B. Grimsdale. Assistant Ophthalmic Surgeon: Mr. R R. James. Assistant Surgeons: Mr. T. Crisp English, Mr. L. Jones, and Mr. W. F. Fedden. Surgeon to the Throat Department: Mr. H. S. Barwell. Aural Surgeon: Mr. W. C. Bull. Dental Surgeon: Mr. N. G. Bennett. Assistant Dental Surgeon: Mr. Morley.

Lecturers.—Baillie Lecturer in Physic: Dr. Howship Dickinson. Thomas Young Lecturer in Medicine: Professor William Osler. Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Principles and Practice of Physic: Dr. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Tropical Medicine: Dr. T. S. Kerr. Principles and Practice of Surgery: Mr. Dent, Mr. Turner, Mr. Jaffrey, and Mr. Pendlebury. Midwifery and Diseases of Women and Children: Dr. Dakin. Assistant Lecturer on Midwifery and Diseases of Women and Children: Dr. Stabb. Vaccination: Mr. E. Climson Greenwood. Insanity and Clinical Instructor in Insanity: Dr. Seymour Tuke. Ophthalmic Surgery: Mr. Grimsdale. Diseases of the Skin: Dr. Fox. Aural Surgery: Mr. Bull. Diseases of the Throat and Nose: Mr. Barwell. Dental Surgery: Mr. Norman Bennett. Assistant Lecturer on Dental Surgery: Mr. Morley. Practical Medicine: Dr. Jex-Blake. Practical Surgery: Mr. English. Operative Surgery: Mr. L. Jones. Surgical Anatomy: Mr. Fedden. Edward Jenner Lecturer on Public Health: Dr. F. E. Fremantle. Hygiene: Dr. H. Spitta. Forensic Medicine and Toxicology: Dr. Trevor. Toxicological Chemistry: Mr. Gardner. [illegible] Dr. Spriggs. Pathology: Dr. [illegible] Slater. Assistant Lecturer or [illegible] on Clinical Pathology: Dr. [illegible] Medica and Therapeutics: Dr. Cyril Ogle. Pharmacology: Dr. Spriggs. Anæsthetics: Dr. Frederic Hewitt, M.V.O. Teacher of Anæsthetics: Dr. Blumfeld. Assistant Teachers of Anæsthetics: Dr. Powell and Mr. Longhurst. Advanced Anatomy: Mr. Jaffrey. Advanced Physiology and [illegible] Dr. Buckmaster. Advanced Chemistry and [illegible] Chemistry: Mr. Gardner. Teacher of S[illegible] Simmons. Curator of the Museum: Dr. Tr[illegible] Curator of [illegible] J. A. Torre[illegible] Curator of [illegible] Spitta. Demonstrator in Materia Medica: Dr. A. Manuel. Medical Tutor: Dr. F. W. Higgs Surgical Tutor: Mr. Ivor Back. Dean of the Medical School: Dr. E. I Spriggs.

Scholarships and Prizes.—At this school six entrance scholarships are given, the money value and the subjects of examination being as follows: (*a*) and (*b*), two in Arts, 50 guineas each, Latin or Greek, French or German, English, Mathematics; (*c*) and (*d*), two in Science, 50 guineas each, Chemistry, Physics, Zoology, and Botany; (*e*) and (*f*), two University Entrance Scholarships, 70 guineas and £50 respectively, Anatomy and Physiology. The others are as follows: (*g*) William Brown Exhibition, tenable for two years and open to perpetual pupils having registrable *qualifications*, £100 per annum, Practice of Medicine, Midwifery, and Surgery; (*h*) William Brown Exhibition, tenable for three years and open to perpetual pupils qualified not more than three years previously, £40 per annum, Essay and Orig[illegible] Allingham Scholarship in Surgery for stude[illegible] more than three years interest on £18[illegible] Essay; (*j*) and (*k*), [illegible] and one in Surgery, [illegible] of not more than fi[illegible] for Proficiency in [illegible] a written Examinat[illegible] £10 10s.; (*m*) H. C. Johnson Memorial Prize, £10 10s., Practical Anatomy; (*n*) *Pollock Prize, interest on* £372, Physiology, Physiological Chemistry, and Histology; (*o*) Clarke Prize, interest on £209, Clinical Reports; (*p*) Thompson Medal, interest on £185, Clinical Reports; (*q*) Brodie Prize, interest on £220, Clinical Reports; (*r*) Webb Prize, open to perpetual pupils, interest on £1000; Bacteriology.

GUY'S HOSPITAL.—This hospital, founded by Thomas Guy in 1721 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 608 beds.

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, ophthalmic house surgeons, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical and medical clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical *council according to merit. The house physicians, of whom* there are four, hold office for six months each. The out-patient officers, who hold office for three months, attend in the out-patient or casualty department during the week and see all the cases not seen by the assistant physician of the day. The house physicians have the care of the patients in the medical wards and attend to all emergencies arising in the absence of the physicians. They are provided with board and lodging in the college free of expense. The house surgeons, of whom there are four, hold office for six months each and are provided with board and lodging in the college free of expense. The Surgical Casualty Department is in charge of two assistant house surgeons and there are four out-patient officers appointed each three months. The surgeons' dressers are selected from those students who have completed their third winter session and have been most diligent in the junior appointments. They *hold office for three or six months.* Six are attached to each surgeon and during their weeks of special duty they are provided with board and lodging in the hospital free of expense. The college stands upon a site fronting the east gate of the hospital and is connected with it by a subway. The building serves as a Residential College for Students and at the same time provides accommodation for the Students' Club.

Medical and Surgical Staff.—Consulting Physicians: Sir Samuel Wilks, Bart., Dr. F. W. Pavy, Dr. P. H. Pye-Smith, Dr. J. F. Goodhart, and Dr. F. Taylor. Consulting Surgeons: Mr. Thomas Bryant, Sir H. G. Howse, Mr. W. H. A. Jacobson, Mr. R. C. Lucas, and Mr. Golding-Bird. Consulting Obstetric Physician: Dr. A. L. Galabin. Consulting Physician for Mental Diseases: Dr. G. H Savage. Con[illegible] aidlaw Purves. Consulting [illegible] onsulting Ophthalmic Sur[illegible] W. A. Brailey. *Consulting* [illegible] Pedley. Physicians and [illegible] ale White, Dr. G. Newton Pitt, Sir Cooper Perry, Dr. L. E. Shaw, *Dr. J. Fawcett*, Dr. A. P. Beddard, Dr. H. S. French, and Dr. A. F. Hertz. Surgeons and Assistant Surgeons: Mr. Charters J. Symonds, Mr. W. Arbuthnot Lane, Mr. L A. Dunn, Sir Alfred Fripp, C.B., K.C.V.O., Mr. F. J. Steward, Mr. Fagge, Mr. R. P. Rowlands, and Mr. Philip Turner. Obstetric Physicians: Mr. J. H. Targett and Mr. G. Bellingham Smith. Ophthalmic Surgeons: Mr. H. L. Eason and Mr. A. W. Ormond. Physician in Charge of Skin Department: Sir Cooper Perry. Physician for Mental Diseases: Dr. M. Craig. *Surgeon in Charge of Throat* Department: Mr. F. J. Steward. Surgeon in Charge of Aural Department: Mr. P. Turner. Dental Surgeons: Mr. W. A. Maggs, Mr. R. Wynne Rouw, Mr. H. L. Pillin, and Mr. M F. Hopson. Anæsthetists: Mr. G. Rowell, Dr. H. F. Lancaster, Mr. C. J. Ogle, Dr F. E. Shipway, Mr. H. M. Page, Mr. W. M. Mollison, Mr. A. R. Thompson, Mr. R. Davies-Colley, Mr. Hughes, and Dr. Cameron. Medical [illegible] and Tutors: Mr. H. C Cameron and Mr. C. H. [illegible] and Tutor: Mr. R. Davies-[illegible] Tutors: Mr. T. B. Layton [illegible] herapeutic Department: Dr. [illegible] Mr. E. W. H. Shenton, Dr. A. E. Jordan, and Dr C. J. Morton. Bacteriologist to the Hospital: Dr. J. W. H. Eyre. Resident Surgical Officer: Mr. E. L. Martyn Lobb. Hon. Librarian, Wills Library: Dr. L. E. Shaw. Lying-in Charity: Mr. Targett and Mr. Bellingham Smith. Dean of the Medical School: Dr. H. L. Eason. Warden of the College: Mr. W. M. Mollison, M.C.

(*e*) Price Scholarship in connexion with study at Oxford or Cambridge £60, Human Anatomy and Physiology; (*f*) and (*g*) two Buxton Scholarships £30 and £20 respectively, subjects of Preliminary Examination; (*h*), (*i*), and (*j*) three Scholarships for Clinical Work £20 each, Medicine, Surgery, and Obstetrics; (*k*) Sutton Prize £20, Pathology; (*l*) Duckworth Nelson Prize, biennial, £10, Pathology, Practical Medicine, and Surgery; (*m*) Letheby Prizes (3) £30, Chemistry; (*n*) and (*o*) two Scholarships £25 in Anatomy and Physiology, £20 in Anatomy and Biology; (*p*), (*q*), (*r*), (*s*), (*t*), (*u*) six Dressers' Prizes, £10 each, zeal, efficiency, and knowledge of Minor Surgery; (*v*) Hutchinson Prize, triennial, £40, Clinical Surgery; (*w*) and (*x*) two Practical Anatomy Prizes, £6 and £4 respectively; (*y*) Andrew Clark Prize, biennial, £26, Clinical Medicine and Pathology; (*z*) James Anderson Prizes, £9, Clinical Medicine; (*a a*) Douro Hoare Prize, £5, Physiology; and (*b b*) Wynne Baxter Prize, £5 5*s*., Forensic Medicine.

Medical Research.—The London Hospital Medical College has lately become the trustees of a generous gift, the income of which is to be devoted entirely to the encouragement of Medical Research. Special facilities are now offered to those desirous of engaging in research at the Hospital or College and to students preparing theses for University degrees.

St. Mary's Hospital.—301 beds, 31 of which have been recently opened in the Clarence Wing and are devoted to cases requiring treatment by therapeutic inoculation. The number of in-patients treated during 1908 was 4059. The number of out-patients was 23,905 with 25,627 casualty cases, a total of 49,532. The situation of the hospital and Medical School in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it exceptionally convenient for students' rooms, a register of which is kept by the authorities for the use of students.

Laboratories, &c.—The Medical School provides for the entire curriculum. Special laboratories are in use for Biology, Chemistry, and Physics, a series of lecture theatres and laboratories for anatomy and physiology, and a spacious and well-lighted dissecting-room. The Pathological Department is under the direction of Sir Almroth Wright, F.R.S., and a block of consulting-rooms and laboratories in the New Wing of the Hospital has been equipped for the department of Therapeutic Inoculation to meet the increased amount of work in that department. During the past year 511 patients have received treatment in the department. A special laboratory is provided for the study of chemical pathology.

Appointments.—All clinical appointments in the hospital are free to students of the Medical School and the resident medical officers are chosen by competitive examination. Six house physicians, six house surgeons, and four obstetric officers are appointed in each year and receive board and lodging in the hospital. Two resident anæsthetists are appointed in each year and receive a salary at the rate of £100 per annum, with board and lodging. Two casualty house surgeons are appointed in each year upon the same conditions. Several assistants in the department of Therapeutic Inoculation are appointed annually at salaries of £100 per annum and upwards, the total sum available for salaries of assistants in this department being £1600 per annum. In addition to the above, the senior appointments, medical and surgical registrar, casualty physician, demonstrator of anatomy, physiology, and biology are made annually.

Clubs, &c.—The amalgamated clubs include all the various athletic clubs, as well as the rifle club, medical society, &c. There is a students' club on the Hospital premises, the membership of which is included in the amalgamated clubs. The athletic clubs' ground (eight acres) is situated at North Kensington and can be reached in 20 minutes from the Medical School. It consists of Rugby and Association football grounds, tennis courts, and a large cricket pitch.

Special Tuition.—In addition to systematic courses of lectures and demonstrations special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S.

Preliminary Scientific Course.—Special classes, including lectures and laboratory work, are held throughout the year under recognised teachers of the University of London.

The composition fee for full students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum or by payment of two annual instalments of 35 guineas (£36 15*s.*) and 30 guineas (£31 10*s.*) respectively. University students who have not completed their examination in Anatomy and Physiology pay an annual fee of 25 guineas (£26 5*s.*) until they have passed these examinations, and then pay the composition fee. Separate courses of lectures, laboratory work, or hospital practice may be taken. The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

Staff.—Consulting Physicians: Dr. Cheadle and Dr. Lees. Consulting Surgeons: Mr. A. T. Norton, Mr. Edmund Owen, Mr. Herbert Page, Mr. G. P. Field (Aural), Sir G. Anderson Critchett, Bart. (Ophthalmic), Sir Malcolm Morris (Skin), Mr. Morton Smale (Dental), and Dr. Scanes Spicer (Throat). Consulting Anæsthetist: Mr. Henry Davis. Physicians: Dr. Sidney Phillips, Dr. A. P. Luff, and Dr. H. A. Caley. Surgeons: Mr. A. J. Pepper, Mr. J. Ernest Lane, and Mr. H. Stansfield Collier. Physicians in charge of Out-Patients: Dr. Wilfred Harris, Sir John Broadbent, Bart., and Dr. W. H. Willcox. Surgeons in Charge of Out-Patients: Mr. V. Warren Low, Mr. W. H. Clayton-Greene, and Mr. Maynard Smith. Physician-Accoucheur: Dr. Montagu Handfield-Jones. Physician-Accoucheur in charge of Out-Patients: Dr. W. J. Gow. Physician in charge of Children's Department: Dr. Sidney Phillips. Ophthalmic Surgeon: Mr. H. E. Juler. Assistant Ophthalmic Surgeon: Mr. Leslie Paton. Physician to the Skin Department: Dr. Graham Little. Dental Surgeon: Mr. W H. Dolamore. Surgeons to the Ear, Nose, and Throat Department: Dr. G. William Hill and Mr. C. I. Graham (assistant). Administrators of Anæsthetics: Dr. Blumfeld, Mr. Collum, and Mr. Henry Chaldecott. Director in Medical Charge of Inoculation Department: Sir Almroth Wright. Dean: Mr. W. H. Clayton-Greene.

Lecturers.—Clinical Medicine: Dr. Sidney Phillips. Clinical Surgery: Mr. A. J. Pepper. Medicine: Dr. A. P. Luff and Dr. H. A. Caley. Surgery: Mr. J. Ernest Lane and Mr. H. Stansfield Collier. Practical and Operative Surgery: Mr. V. W. Low and Mr. Maynard Smith. Pathology: Sir A. E. Wright and Dr. Spilsbury. Bacteriology: Sir A. E. Wright and Captain S. R. Douglas (assistant lecturer). Pathological Chemistry: Dr. W. H. Willcox. Midwifery and Gynæcology: Dr. M. Handfield-Jones. Materia Medica and Therapeutics: Dr. H. A. Caley. Forensic Medicine: Dr. Willcox. Neurology: Dr. Harris. Descriptive and Surgical Anatomy: Mr. W. H. Clayton-Greene. Demonstrators: Mr. C. I. Graham and Dr. V. Z. Cope. Physiology and Histology: Dr. N. H. Alcock. Biology: Dr. W. G. Ridewood. Demonstrator: Mr. T. Reed. Chemistry: Dr. G. Senter. Physics: Mr. W. H. White. Hygiene and Public Health: Dr. W. H. Willcox. Mental Diseases: Dr. Theo B. Hyslop. Diseases of the Eye: Mr. Leslie Paton. Diseases of the Ear, Nose, and Throat: Dr. G. William Hill. Diseases of the Skin: Dr. Graham Little. Dental Surgery: Mr Dolamore. Medical Tutors: Sir John Broadbent and Dr. Willcox. Surgical Tutors: Mr. V. Warren Low, Mr. Clayton-Greene, and Mr. Maynard Smith. Obstetric Tutor: Dr T. G. Stevens. Medical Registrar: Dr. R. H. Miller. Surgical Registrar: Mr. M. Fitzmaurice Kelly. Department for Nervous Diseases: Dr. W. J. Harris. Practical Pharmacy: Mr. E. A. Andrews (demonstrator). School Secretary: Mr. B. E. Matthews.

Scholarships and Prizes.—The money value and subjects of examination of these are as follows: (*a*), (*b*), (*c*), and (*d*), four Natural Science Scholarships awarded by competition, £145, £50, £50, and £25 respectively; (*e*) and (*f*), two University Scholarships open to students from any British University, £52 10*s*. each, Natural Science, (*g*) Epsom College Scholarship awarded by nomination, representing free tuition; (*h*) Gold Medal, £20, an Essay on Some Special Point in Clinical Medicine; (*i*), (*j*), and (*k*), three General Proficiency Scholarships, £20 each, one in Advanced Anatomy, Physiology, and Histology, one in Midwifery, Materia Medica, Pathology, and Forensic Medicine, and one in Medicine, Surgery, Hygiene, and Mental Diseases; (*l*) Dermatology Prize, awarded twice in each year, £5 5*s*.; (*m*) Meadows' Prize, awarded in alternate years, £8, Obstetrics; (*n*) and (*o*), Clinical Medicine and Clinical Surgery Prizes, £5 5*s*. each, Clinical Reports by Students of third and fourth years; (*p*) nine Winter Session Prizes, £3 3*s*. each, subjects of the medical curriculum; and (*q*) nine Summer Session Prizes, £2 2*s*. each, subjects of the medical curriculum

MIDDLESEX HOSPITAL.—The hospital contains 345 beds, which includes a special wing for patients suffering from cancer, consisting of four wards, containing 45 beds; here cancer patients are received and attended for a period limited only by the duration of their disease. The number of patients treated last year were: Out-patients, 47,880; in-patients, 3859. Cancer: Out-patients, 87; in-patients, 159.

The Hospital and Medical School are fully equipped for the theoretical and practical teaching of all the subjects included in the examinations in Medicine and Surgery in the United Kingdom and for the diploma in Public Health; and ample laboratory and class-room accommodation is provided for the teaching of the various subjects of the curriculum and for original research in Medicine, Pathology, or Bacteriology. A Maternity Ward in which students receive systematic instruction in Obstetric Medicine has recently been added to the hospital.

Special Classes are held to prepare students for the Inter. M.B. (Lond.) Examination and for the Primary and Final Examinations for the diploma of F.R.C.S. Eng.

Attached to the Cancer Wing of the hospital is a special research laboratory and in connexion with this there are the Emden Cancer Research Scholarship, the Richard Hollins Research Scholarship, the Salters' Company Cancer Research Scholarship, and a Cancer Research Scholarship.

The Bacteriological and Public Health Laboratory for Women Medical Practitioners and Women Students, situated at 27, Mortimer-street, W., is in connexion with this hospital, and is under the direction of Mr. A. G. R. Foulerton, assisted by Dr. Hilda K. Whittingham. This laboratory, for the maintenance of which a private guarantee fund has been raised by some supporters of the hospital who are anxious to provide facilities for the special training of women in Public Health work, has been added to the Middlesex Hospital Medical School for the purposes of providing instruction for women medical practitioners for the examinations for the Diploma in Public Health and for the M.D. in State Medicine of the University of London, and of affording facilities to them and other women students for carrying out research work in Public Health, Bacteriology, and General Pathology.

Hospital Appointments.—All hospital appointments are allotted to students without any extra fee. The following 18 resident appointments—six house physicians, six house surgeons, two obstetric house physicians, two casualty medical officers, and two casualty surgical officers—are annually filled from the pupils of the hospital, each appointment extending over six months.

A *Residential College* to accommodate a limited number of students adjoins the hospital. Breakfast, luncheon, and dinner are supplied in the College Hall at moderate charges.

The Amalgamated Students' Club includes the following: the Medical Society, the Common Room Society, the cricket club, the football clubs, the athletic clubs, the rowing club, the musical society, the chess club, the lawn tennis club, and the hockey club. The athletic ground, which is eight acres in extent, is situated within easy access at Wormwood Scrubs.

Fees.—The Composition Fee for the entire curriculum is 135 guineas, or 145 guineas if paid in three instalments. The fee for London University students is 145 guineas; for those who have passed the Preliminary Scientific 120 guineas. The fee for the Dental Curriculum is 54 guineas, or 60 guineas if paid in two instalments. Students who have completed the study of Anatomy and Physiology or passed the London Preliminary Scientific M.B. Examination are received on special terms.

Lecturers.—Winter Session: Anatomy: Dr. Cameron. Demonstrator: Dr. Gladstone. Embryology: Dr. Gladstone. Biology and Physiology: Mr. Goodall. Demonstrator: Mr. Earle. Chemistry: Dr. Kellas. Emeritus Lecturer in Medicine: Sir R. D. Powell, Bart., M.D. Medicine: Dr. Pasteur and Dr. Wynter. Practical Medicine: Dr. Voelcker. Emeritus Lecturer in Surgery: Sir Henry Morris, Bart. Surgery: Mr. Pearce Gould, Mr. Bland-Sutton, and Mr. Murray. Practical Surgery: Mr. Kellock. Operative Surgery: Mr. Kellock. Practical Midwifery: Dr. Bonney. Pathology: Dr. Voelcker. Forensic Medicine and Toxicology: Dr. Wethered. Clinical Lectures in Medicine: The Physicians. Clinical Lectures in Surgery: The Surgeons. Clinical Lectures on Diseases of the Ear, Throat, and Nose: Mr. S. Paget. Lectures in Ophthalmology: Mr. Lang. Lectures in Dental Surgery: Mr. Nowell. Public Health and Bacteriology: Mr. Foulerton. Summer Session: Pharmacology and Therapeutics: Dr. R. A. Young. Midwifery: Dr. Comyns Berkeley. Pathological Histology: Dr. Voelcker. Practical Toxicology: Dr. Kellas. Mental Diseases: Dr. Mickle. Lectures in Dermatology: Dr. Pringle. Anatomy, Chemistry, and Physiology: as in Winter Session. Tutors—Medicine: Dr. Campbell Thomson; Surgery: Mr. Handley; Obstetrics: Dr. Taylor.

Staff.—Consulting Physicians: Dr. W. Cayley, Dr. Sidney Coupland, and Sir J. K. Fowler, D [illegible] Physicians to Out-patients: Dr. A. P. Voelcker, Dr. F. J. Wethered, and Dr. H. Campbell Thomson (Dean of the Medical School). *Assistant Physician: Dr. R. A. Young.* Consulting Physician to the Skin Department: Dr. R. Liveing. Physician to the Skin Department: Dr. J. J. Pringle. Consulting Obstetric Physician: Dr. W. Duncan. Obstetric Physician: Dr Comyns Berkeley. Assistant Obstetric Physician: Dr. Victor Bonney. Consulting Surgeons: Sir Henry Morris, Bart., and Mr. Clark. Surgeons: Mr. Gould, Mr. Bland-Sutton, and Mr. Murray. Surgeon to Out-patients: Mr. Kellock. Assistant Surgeons: Mr. Handley and Mr. Gordon Taylor. Ophthalmic Surgeon: Mr. W. Lang. Aural Surgeon: Mr. S. Paget. Consulting Dental Surgeon: Mr. W. Hern. Dental Surgeon: Mr. Nowell. Assistant Dental Surgeon: Mr. H. W. Turner. Curator of the Museum and Pathologist: Dr. Lakin. Registrars: Dr. Otto May, Mr. Rowntree, and Dr. Taylor. Resident Medical Officer: Mr. A. E. Johnson. Anæsthetists: Mr. T. G. A. Burns and Mr. H. P. Noble. Assistant Anæsthetist: Mr. H. Charles.

Scholarships and Prizes.—Holders of the Entrance Scholarships are required to become general students of the school. The money value and subjects of examination are as follows: (*a*), (*b*), and (*c*), three Entrance Scholarships, £100, £50, and £25 respectively; (*d*) Entrance Scholarship for Students from Oxford or Cambridge, £50, Anatomy and Physiology, including Histology; (*e*) Freer Lucas Scholarship for Students of Epsom College, on nomination of Headmaster, £126; (*f*) and (*g*), two Broderip Scholarships for Senior Students, £60 and £40 respectively, Clinical subjects; [illegible]

Surgical Pathology and Bacteriology; (*m*) second year's Exhibition, £10 10*s*., Anatomy and Physiology; (*n*) "Emden" Cancer Research Scholarship tenable for three years, £100; (*o*) Richard Hollins Research Scholarship, £105; (*p*) Salters' Company Cancer Research Scholarship, £100; and (*q*) Cancer Research Scholarship, £60.

ST. THOMAS'S HOSPITAL.—This hospital received its present charter from King Edward VI., but as a monastic institution was in existence prior to the year 1207. The building occupies a unique position by the river, opposite the Houses of Parliament, and contains 600 beds. The in-patients last year numbered 6972, whilst the number of attendances as out-patients, including the casualty and light departments, was 226,239. There are departments for the treatment of women, children, the eye, ear, nose and throat, skin, and teeth. Departments for light treatment, x rays, and physical exercises are also special features. Exceptional facilities are offered in the hospital laboratories for the study of general pathology, clinical pathology, and of treatment by serums and vaccines. Surgical operations take place in the main theatres every day except Saturdays at 2 P.M. Clinical teaching in the wards, out-patients' and special departments is available every day of the week. Clinical lectures are delivered every Wednesday and Thursday during the sessions. All appointments in the hospital are open to students without extra fee. Casualty officers and resident anæsthetists, house physicians, house surgeons, obstetric house physicians, ophthalmic house surgeons, and out-patient officers are appointed and hold office for six months. They are provided with rooms and commons in the hospital free of expense. Clinical assistants to all the special departments are appointed every three months; they are non-resident. A resident assistant physician and a resident assistant surgeon, at a salary of £100 each, are appointed biennially; also four hospital registrars (medical, surgical, obstetric, and ophthalmic), the two former receive a salary of £100 and the two latter £50. An assistant in the clinical laboratory, at a salary of £100 per annum, and an assistant pathologist, at a salary of £125, are from time to time appointed. Appointments open to students before qualification: Clinical clerks and dressers for in- and out patients are selected from students who have completed their third year's work. The accident dressers are provided with board and lodging during their periods of special duty. Every student acts as clerk in the post-mortem room and in one of the pathological laboratories, takes his turn for three weeks on maternity duty under proper supervision, and is practically instructed in the administration of anæsthetics by one of the hospital anæsthetists. On completion of his term as clerk or dresser he is expected to fill appointments in one or more of the special departments. In their earlier years of study students are selected as assistants to the lecturers in the preliminary and intermediate subjects The Medical School is fully equipped for the teaching of all subjects of the curriculum. A fine museum and large library are at the disposal of the students. There are three lecture theatres, an unusually large and well-ventilated dissecting-room, and special laboratories for biology, chemistry, physics, physiology, and pathology. The post-mortem room, where demonstrations are given every day, is ventilated by the electric fan and provided with cold storage. The Students' Club comprises a spacious restaurant and magnificent smoking and reading room. There is no occasion for students to leave the hospital buildings during working hours. The athletic ground of the Amalgamated Clubs at Chiswick is over nine acres in extent and is easily accessible from Waterloo Station. The curriculum is arranged to meet the requirements of all the Examining Bodies. Special classes are held for the examinations at the University of London and for the First and Final Fellowship Examinations of the Royal College of Surgeons of England. Tutorial classes in all subjects precede the various examinations. There is a special course for the Diploma in Public Health. The hospital is easily accessible from all parts. It is close to the Waterloo and Westminster Bridge Stations (L. & S.W., Bakerloo, and District Railways). Electric trams which pass the doors connect it with all parts of South London. A register of lodgings and a list of medical men and others who are willing to receive boarders is kept by the secretary, Mr. G. Q. Roberts, who will give any further information required.

Fees.—The annual composition fee is 30 guineas—in addition to a fee on entrance. Post-graduate study is afforded to qualified practitioners by a joint ticket which admits to the practice of 14 hospitals (general and special) on terms which may be ascertained from the secretary.

Staff.—Consulting Physicians: Dr. Harley and Dr. Payne. Consulting Surgeons: Mr. S. Jones and Mr. B. Pitts. Consulting Obstetrical Physician: Dr. Gervis. Consulting Ophthalmic Surgeons: Mr. Liebreich and Mr. Nettleship. Consulting Anæsthetist: Mr. W. Tyrrell. Consulting Dentist: Mr. C. E. Truman. Physicians: Dr. Sharkey, Dr. Acland, Dr. Hawkins, Dr. Mackenzie, and Dr. Turney. Surgeons: Mr. Clutton, Mr. G. H. Makins, C.B., Mr. Battle, Mr. Ballance, M.V.O., and Mr. Robinson. Physicians to Out-patients: Dr. Perkins, Dr. Colman, Dr. Box, and Dr. Russell. Surgeons to Out-patients: Mr. C. S. Wallace, Mr. E. M. Corner, Mr. Sargent, and Mr. C. A. R. Nitch. Obstetric Physician: Dr. Tate. Obstetric Physician to Out-patients: Dr. Fairbairn. Ophthalmic Surgeon: Mr. Lawford. Ophthalmic Surgeon to Out-patients: Mr. Fisher. Physician for Diseases of Children: Dr. Box. Surgeon for Diseases of Children: Mr. C. A. R. Nitch. Surgeon for Diseases of the Throat: Mr. H. B. Robinson. Physician for Diseases of the Skin: Dr. E. Stainer. Surgeon for Diseases of the Ear: Mr. Marriage. Dental Surgeons: Mr. J. G. Turner and Mr. G. L. Bates. Resident Assistant Physician: Dr. Cassidy. Resident Assistant Surgeon: Mr. L. E. C. Norbury. Anæsthetists: Dr. H. Low, Dr. Bevan, Dr. Mennell, and Dr. Hedley. Pharmaceutist: Mr. J. A. Jennings. Curator of Museum: Mr. S. G. Shattock. Director of Laboratories: Mr. L. S. Dudgeon. Superintendent of X Ray Department: Dr. Greg.

Lecturers and Demonstrators.—Anatomy: Mr. F. G. Parsons, with Mr. P. W. G. Sargent and Mr. C. A. R. Nitch. Chemistry: Dr. Le Sueur. Physiology: Dr. J. Mellanby. Biology: Mr. Cutting. Pathology and Bacteriology: Mr. Shattock and Mr. Dudgeon. Surgery: Mr. Battle and Mr. Ballance. Medicine: Dr. Sharkey and Dr. Hawkins. Practical and Operative Surgery: Mr. Robinson, Mr. Wallace, and Mr. Corner. Comparative Anatomy: Mr. Parsons. Applied Anatomy: Dr. Box. Anæsthetics: Dr. Low. Physics: Mr. Brinkworth. Clinical Medicine: The Physicians. Clinical Surgery: The Surgeons. Midwifery and Diseases of Women: Dr. Tate and Dr. Fairbairn. Diseases of the Eye: Mr. Lawford and Mr. Fisher. Pharmacology and Therapeutics: Professor Dixon. Throat Disease: Mr. H. B. Robinson. Physiological Demonstrator: Mr. E. Mellanby. Obstetrical Demonstrators: Dr. Fairbairn and Dr. Hedley. Practical Medicine: Dr. Perkins, Dr. Colman, Dr. Box, and Dr. Russell. Surgical Classes: Mr. Wallace, Mr. Corner, Mr. Sargent, Mr. Fisher, and Mr. Shattock. Forensic Medicine and Toxicology: Dr. Colman and Dr. Haas. Mental Diseases: Dr. R. Percy Smith. Public Health: Professor Simpson. Tropical Medicine: Dr. Sandwith. Instruction in Vaccination by Dr. Cope. Dean of the School: Mr. Cuthbert Wallace. Sub-Dean: Dr. C. R. Box. Secretary: Mr. G. Q Roberts, from whom any further information may be obtained.

Scholarships and Prizes.—At this school there are five Entrance Scholarships—namely, two in Arts, equivalent to the tuition fees for the first medical examination; two in Natural Science of the value of £150 and £60 respectively, to be taken out in tuition fees; and the University Scholarship of £50 in Anatomy, Physiology, and Chemistry. The money value and subjects of examination of the remainder are as follows:—(*a*) and (*b*), two college prizes for second-year students, £10 and £5 respectively; (*c*) William Tite Scholarship for second-year students, £25; (*d*) and (*e*), Musgrove Scholarship or (alternately) Peacock Scholarship each for third-year students and tenable for two years, £35 each; (*f*) one College Prize for third-year students, £10; (*g*) three College Prizes for fifth year students of £10 each and three of £5 each; (*h*) Cheselden Medal, Surgery and Anatomy; (*i*) Mead Medal, Medicine, Pathology, and Hygiene; (*j*) Toller Prize, Medicine, Pathology, and Hygiene; (*k*) Bristowe Medal, Pathology and Morbid Anatomy; (*l*) Solly Medal and Prize, biennially, Surgical Reports; (*m*) Medal for the most distinguished fifth-year student; (*n*) Wainwright Prize, Medicine, Pathology, and Hygiene; (*o*) Hadden Prize, Pathology; (*p*) Beaney Scholarship, £50 biennially, Surgery and Surgical Pathology; (*q*) Sutton Sams Prize, biennially, reports of cases in Obstetric Medicine; (*r*) Grainger Testimonial Prize, £15, Anatomy and Physiology; (*s*) Salters' Company Research Fellowship, tenable for three years, £100 annually, Pharmacology; and (*t*) Louis Jenner Research Scholarship Tenable for two years, £60 annually, Pathology.

UNIVERSITY COLLEGE, LONDON.—University College has been constituted a University centre for the teaching of medical sciences. The College Faculty of Medical Sciences comprises the Departments of Physics, Chemistry, Botany, and Zoology (the Preliminary Medical Sciences); also the Departments of Anatomy, Physiology, and Pharmacology (the Intermediate Medical Sciences), and the Departments of Hygiene and Public Health and of Pathological Chemistry (Post-graduate Study).

The new Institute of Physiology, opened by the Right Hon. R. B. Haldane on June 18th last, the new Department of Botany, and the new Department of Pharmacology will be ready for the use of students in October.

Faculty of Medical Sciences.—Composition fees.—For the courses required by the University of London. 1. For the First Medical (Preliminary Scientific) Course, 26 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. 2. For the Second Medical (Intermediate) Course, 58 guineas if paid in one sum; 63 guineas if paid in two instalments of 32 guineas and 31 guineas respectively. This fee entitles to attendance on Anatomy and Physiology during three years and to one attendance on Organic Chemistry, Pharmacology, and Materia Medica, and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

For the medical education required by the Examining Board in England, and the Society of Apothecaries. First examination, Parts I., II., III., 21 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. First examination, Part IV., and second examination, 58 guineas if paid in one sum, and 63 guineas if paid in two instalments of 32 guineas and 31 guineas respectively. This fee entitles to attendance [illegible] Society [illegible], ground [illegible]

Professors and Lecturers.—1. First Medical (Preliminary Scientific) Course.—Chemistry:—Professor: Sir William Ramsay, K.C.B., F.R.S.; assistant professors: E. C. C. Baly, F.I.C., F.R.S., Samuel Smiles, D.Sc., and N. T. M. Wilsmore, D.Sc.; *assistants: R. W. Gray, Ph.D., and* W. B. Tuck, B.Sc.; demonstrator: H. T. Clarke. Physics:—Professor: F. T. Trouton, F.R.S.; assistant professor: A. W. Porter, B.Sc.; assistants: N. Eumorfopoulos, B.Sc., A. O. Rankine, B.Sc. Botany:—Professor: F. W. Oliver, M.A., D.Sc.; assistant professor: F. E. Fritsch, D.Sc., Ph.D.; assistant: T. G. Hill, A.R.C.S. Zoology:—Professor: J. P. Hill, D.Sc.; assistants: W. Woodland, D.Sc., and C. H. O'Donoghue, B.Sc. 2. Second Medical (Intermediate) Course.—Anatomy:—Professor: G. D. Thane, LL.D.; assistant and curator of the museum: G. S. Hett, M.B.; demonstrators: G. E. Waugh, B.S., F.R.C.S., H. T. Mant, M.S., F.R.C.S.; assistant demonstrators: J. H. Farbstein, M.B., B.S.; W. E. Haigh, M.R.C.S., L.R.C.P. Physiology:—Professor: E. H. Starling, M.D., F.R.S.; assistant professors: W. M. Bayliss, D.Sc., F.R.S., G. A. Buckmaster, M.D.; assistant: R. H. Aders-Plimmer, D.Sc.; lecturers: J. H. Parsons, F.R.C.S. W. Page May, M.D., D.Sc., S. B. Schryver, D.Sc. Pharmacology:—Professor: A. R. Cushny, M.D., F.R.S. Organic Chemistry:—Professor: J. N. Collie, F.R.S.; assistant: Samuel Smiles, D.Sc.

Scholarships and Prizes.—At University College the various exhibitions, prizes, medals, &c., which are given have a relation to medical study. The first two items on the present list require a complete intermediate course at University College. The money value and subjects of examination are as follows:—(*a*) and (*b*) tw [illegible] Chemistry, [illegible] Memorial Pr [illegible] Chemistry; [illegible] (*c*) Sharpey [illegible] Sciences; (*f*, [illegible] sional men, by nomination, tenable for two years, £16 a year; and (*g*) five Gold and five Silver Medals awarded annually in various departments.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Dean: H. Batty Shaw, M.D., F.R.C.P. Vice-Dean: Raymond Johnson, B.S., F.R.C.S. Secretary: L. R. Thomas. Fees for Preliminary and Intermediate Course: See under University College. For the Final M.B., B.S. Course, 80 guineas if paid in one sum, 82 guineas if paid in two instalments, as follows—first year, 50 guineas; second year, 32 guineas. This fee entitles to attendance on Lectures and Hospital Practice during three years and to one attendance on Practical Pathology and Practical Surgery. Vaccination and attendance at a Fever Hospital are not included. Students who obtain a medical qualification within three years of the time of commencing this course are not required to pay an additional fee for further attendance. This course of instruction is also suitable for the corresponding examinations at the Universities of Oxford, Cambridge, and Durham, and for the medical education required by the Examining Board in England and the Society of Apothecaries.

There are 300 beds in the hospital and 51,369 patients were treated last year.

Special Departments, Clinical or Laboratory Facilities.—Those who are desirous of carrying out original research in Pathology, including Morbid Anatomy, Bacteriology, Experimental Pathology, and Chemical Pathology are admitted to work in the laboratories of the school by the Professor. A special course of instruction is given for preparation for the examinations for Diplomas in Public Health of the various universities and examining bodies; also special courses of [illegible] the [illegible] eth, [illegible] and in Clinical and Tropical Pathology. These courses are designed for senior students and graduates.

Appointments tenable by Students.—Clerkships and dresserships to the physicians, surgeons, anæsthetist, and pathologist are allotted amongst the students of the hospital. Maternity students are appointed each month and reside in the Students' House connected with the Medical School and Hospital. Eight house physicians and house surgeons, four senior and four junior obstetric assistants are selected annually by examination from among the senior students who have a medical qualification. The house physicians and house surgeons reside free in the hospital for six months, and the senior obstetric assistants for three months. In addition to these posts there are certain special appointments which are vacant from time to time and are filled by *senior students of the hospital:* 1. *The Resident Medical* Officer. This officer is appointed for a period of two years and is chose [illegible] of the hospi [illegible] from among [illegible] 3. The Obst [illegible] and a Casu [illegible] period of six months. 5. Deputy Anæsthetists. During the absence of one or another of the Anæsthetists in the summer months a senior qualified student is appointed as a substitute and is granted a special certificate.

School Buildings and Equipment.—The new buildings for University College Hospital, completed by the generosity of the late Sir Blundell Maple, Bart., were opened by H.R.H. the Duke of Connaught on Tuesday, Nov. 6th, 1906. The new buildings for the Medical School, erected through the generosity of Sir Donald Currie, are now in occupation and contain accommodation for undergraduate and postgraduate students in all departments of medical study sub- [illegible] —The Museum, a spacious and well-lighted room, is open for study from 8 A.M. to 5 P.M. The collection is divided into three sections—medical, surgical, obstetrical and gynæcological. The surgical section is a particularly complete one and contains examples of every variety of surgical disease and injury. Diseases of the skin are well illustrated by a number of wax models which are conveniently displayed in glass cases. The obstetrical and gynæcological section is very complete. Microscopic sections of most of the specimens in the Museum have been prepared and are available for the use of students *on application to the Curator. The Museum contains* 1100 admirable paintings by Sir Robert Carswell and Sir Charles Bell and a collection of old surgical instruments formerly belonging to Robert Liston. It is also furnished with a small theatre, where separate demonstrations in each subject are given several times a week by members of the teaching staff.

The Anatomical Museum of the University of London, University College, is open to all students of University College Hospital and Medical School on the recommendation of the School Committee.

The Medical Library is open daily for the purposes of study to every student of the Medical School from 9 A.M. to 5 P.M.; Saturdays 9 A.M. to 1 P.M. It contains about 10,000 works on medical subjects, including all the current text-books and works of reference required for study or research.

The Medical Society of University College exists for the dual purpose (1) of promoting the study of Medical and Surgical Science, and (2) of promoting social intercourse among its members. *All Students of the Medical School are* eligible for membership. Meetings are held once a fortnight for the purpose of discussing subjects connected with the study of medicine and the allied sciences and for the exhibition of cases of pathological interest. One room in the Medical School is [illegible] and is provided with [illegible] The society also posse [illegible] collection for the use [illegible] the society includes [illegible] management of three [illegible] Medical School, which [illegible] zines, writing materials, chess- and draught-boards, &c., solely for the use of its members. The society also superin- [illegible] *of the Medical School.* [illegible] in conjunction with the [illegible] of London University [illegible] Western Railway station at Perivale and is within easy reach of the Hospital and School, *about 35 minutes by train from* Gower-street station. The following clubs are connected with *the society: Cricket* Club, Rugby Football Club, Association Football Club, Hockey Club, and Lawn-Tennis Club. The society also has the use of the College racquets and fives courts for its members. The affairs of the society are conducted by a committee elected annually by the members.

Residence of Students.—A register of boarding residences is kept in the office of the Medical School for the convenience of Students; these residences are not under the control of the school authorities. The Students' House in University-street contains large and comfortable rooms. The Maternity Students occupy them on payment of a moderate charge.

Private Instruction.—Gentlemen who desire assistance in their studies should consult the Dean, Professors, or Lecturers.

Hospital Staff.—Consulting Physicians: Sir W. R. Gowers, Dr. H. C. Bastian, Sir J. Williams, Bart., Dr. S. Ringer, and Dr. F. T. Roberts. Physicians: Sir Thomas Barlow, Bart., Dr. J. Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, and Dr. H. Batty Shaw. Assistant Physicians: Dr. F. J. Poynton and Dr. C. Bolton. Obstetric Physicians: Dr. H. R. Spencer and Dr. G. F. Blacker. Consulting Surgeons: Sir John Tweedy (Ophthalmic) and Sir Victor Horsley. Surgeons: Mr. A. E. Barker, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. Raymond Johnson. Assistant Surgeons: Mr. Wilfred Trotter and Mr. H. Morriston Davies. Ophthalmic Surgeon: Mr. Percy Flemming. Assistant Ophthalmic Surgeon: Mr. J. H. Parsons. Professor and Lecturer on Public Health: Dr. Henry R. Kenwood. Dental Surgeon: Mr. Sidney Spokes. Assistant Dental Surgeon: Mr. H J. Relph. Anæsthetist: Dr. Dudley Buxton. Assistant Anæsthetists: Dr. H. J. Scharlieb and Mr. A. Beresford Kingsford. Surgical Registrar: Mr. O. L. Addison. Resident Medical Officer: Dr. A. M. H. Gray. Pathologist: Dr. F. H. Thiele. Electro-therapeutist: Mr. E. S. Worrall. Radiographer: Mr. R. H. Cooper. Pharmacist: Mr. R. R. Bennett.

Teaching Staff.—Medicine—The Principles and Practice of Medicine: Dr. J. Rose Bradford. Clinical Medicine: Sir Thomas Barlow, Dr. J. Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, Dr. F. J. Poynton, and Dr. C. Bolton. Therapeutics: Dr. H. Batty Shaw. Surgery—The Principles and Practice of Surgery: Mr. Arthur E. J. Barker. Clinical Surgery: Mr. Arthur E. J. Barker, Mr. Rickman J. Godlee, Mr. Bilton Pollard, Mr. Raymond Johnson, Mr. Wilfred Trotter, and Mr. H. Morriston Davies. Practical Surgery: Mr. Raymond Johnson and Mr. H. Morriston Davies. Surgical Anatomy: Mr. G. E. Waugh. Midwifery and Gynæcology—Dr. H. R. Spencer. Clinical Midwifery and Gynæcology: Dr. H. R. Spencer and Dr. G. F. Blacker. Diseases of Childhood: Dr. H. Batty Shaw, Mr. Raymond Johnson, Mr. Percy Flemming, and Mr. Herbert Tilley. Pathology and Morbid Anatomy—General Pathology: Dr. Sidney Martin. Practical Pathology: Dr. D. N. Nabarro, Assistant Professor; and Dr. A. C. Stevenson, Assistant Bacteriologist. Laboratory and Special Instruction: Dr. Sidney Martin. Chemical Pathology and Clinical Pathology and Post-mortem Examination: Dr. F. H. Thiele. Museum of Pathological Anatomy: Mr. T. W. P. Lawrence, Curator. Forensic Medicine: Dr. J. S. Risien Russell. Diseases of the Eye—Ophthalmic Medicine and Surgery: Mr. Percy Flemming. Clinical Ophthalmology: Mr. Percy Flemming and Mr. J. Herbert *Parsons. Diseases of the* Ear and Throat: Mr. Herbert Tilley. Mental Physiology and Mental Diseases: Dr. W. Julius Mickle. Dental Surgery: Mr. Sidney Spokes and Mr. H. J. Relph. Instruction in the Use of Anæsthetics: Dr. Dudley W. Buxton. Electro-therapeutic Department: Mr. E. S. Worrall. Radiographic Department: Mr. R. Higham Cooper. Practical Pharmacy: Mr. R. R. Bennett.

Scholarships and Prizes.—At this School the first two items in the present list require a complete course at University College and University College Hospital Medical School; the second two require a final course at the Medical School. The money value and subjects of examination are as follows:—(*a*) Entrance Scholarship, Bucknill, 135 guineas, Chemistry, Physics, Botany, and Zoology; (*b*) Epsom Free Medical Scholarship, subjects of Preliminary Scientific Examination and nomination by Epsom College; (*c*) and (*d*) two Entrance Exhibitions, 80 guineas each, Anatomy and Physiology; (*e*) Atkinson Morley Scholarship, tenable for three years, £45 per annum, Surgery; (*f*) Atchison Scholarship tenable for two years, £55 per annum; (*g*) Filliter Exhibition, £30, Pathology; (*h*) Erichsen Prize, £10 10*s*., Practical Surgery; (*i*) two Senior and two Junior Fellowes Clinical Medals for Clinical Medicine; (*j*) two Liston Gold Medals for Clinical Surgery; (*k*) Alexander Bruce Gold Medal for Pathology and Surgery; and (*l*) Tuke Silver and Bronze Medals for Pathology.

WESTMINSTER HOSPITAL.—The hospital contains 215 beds and affords relief to upwards of 2000 in-patients and 30,000 out-patients annually. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædic practice, for Diseases of Women, for Diseases of Children, for Radiography, and for the Light Treatment. The Anatomical, Pathological, and Materia Medica Museums are open to all students of the school.

A medical and a surgical registrar, each with a salary of £50, are appointed annually. Two house physicians, three house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are pr vided with rooms and commons; also one assistant hou physician and one assistant house surgeon with commo only. Clinical assistants to the assistant physicians a assistant surgeons, and to the officers in charge of speci departments, are appointed from among qualified studen of the hospital.

By a scheme for the concentration of the teaching of t preliminary and intermediate subjects of the curriculu which has the support of the London University, a arrangement has been made by the Westminster scho for the teaching of these subjects at King's Colleg Students, however, join the Westminster Medical Scho as formerly and the Entrance Scholarships remain a heretofore.

There is laboratory accommodation for practical work i Chemistry, Physics, Biology, Anatomy, Physiology, Hist logy, Pathology, and Bacteriology, and a new Clinica Laboratory has recently been erected. Facilities for r search are afforded in all the laboratories.

For out-door recreation the following clubs exist: th Athletic Sports Club, the Cricket, Lawn Tennis, an Swimming Clubs, and the Rugby and Association Footba Clubs. For in-door recreation there are the Students' Clu the Chess Club, and the Guthrie Society, the last-name being a debating club. These clubs and societies togethe constitute the Clubs Union, for membership of whic students are not required to pay, the expense being covere by the entrance fee to the school.

Staff.—Consulting Medical Staff: Dr. H. B. Donkin and Sir William H. Allchin. Consulting Surgical Staff: Mr. Richard Davy, Mr. G. Cowell, and Mr. N. C. Macnamara. Medical In-patient Staff: Dr. de Havilland Hall, Dr. W. Murrell, and Dr. R. G. Hebb. Obstetric Physician: Dr. W. Rivers Pollock. Surgical In-patient Staff: Mr. C. Stonham, Mr. W. G. Spencer, and Mr. A. H. Tubby. Medical Out-patient Staff: Dr. A. M. Gossage, Dr. Purves Stewart, Dr. Eric Macnamara, and Dr. Carmalt-Jones. Physician for Diseases of the Skin: Dr. T. Colcott Fox. Assistant Obstetric Physician: Dr. G. H. Drummond Robinson. Surgical Out-patient Staff: Mr. W. Turner, Mr. Arthur Evans, Mr. Rock Carling, and Mr. J. M. G. Swainson. Surgeon in Charge of the Throat Department: Mr. P. R. W. De Santi. Ophthalmic *Surgeon*: Mr. G. Hartridge. Surgeon in charge of the Orthopædic Department: Mr. A. H. Tubby. Surgeon in charge of the Ear Department: Mr. P. R. W. De Santi. Dental Surgeons: Mr. C. W. Glassington and Mr. E. Gardner. Administrators of Anæsthetics: Dr. N. W. Bourns and Dr. V. B. Orr. Assistant Anæsthetist: Dr. Cecil Hughes. Physician Pathologist: Dr. R. G. Hebb. Assistant Pathologist and Curator of Museum: Dr. J. M. Bernstein. Medical Registrar: Dr. H. F. Marris. Surgical Registrar: Mr. J. J. W. Evans. Pharmacist: Mr. A. E. Tanner. Secretary: Mr. S. M. Quennell.

Lecturers.—Clinical Medicine: Sir William Allchin, Dr. Hall, Dr. Murrell, and Dr. Hebb. Clinical Surgery: Mr. Stonham, Mr. Spencer, and Mr. Tubby. Clinical Gynæcology: Dr. Pollock (treasurer of the school). Medicine: Dr. Murrell, Dr. Hebb, Dr. Gossage, Dr. Purves Stewart, Dr. Macnamara, Dr. Duncan, and Dr. Carmalt Jones. Diseases of the Skin: Dr. Colcott Fox. Insanity: Dr. Stoddart. Surgery: Mr. Spencer. Ophthalmic Surgery: Mr. Hartridge. Surgery of the Throat and Nose: Mr. De Santi. Orthopædic Surgery: Mr. Tubby. Aural Surgery: Mr. De Santi. Dental Surgery: Mr. Glassington. Anæsthetics: Dr. Bourns. Operative Surgery: Mr. Stonham. Surgical Anatomy: Mr. Arthur Evans. Practical

Surgery: Mr. Rock Carling (Dean of the school) and Mr. Swainson. Surgical Pathology: Mr. Turner. Midwifery and Diseases of Women: Dr. Pollock. General Pathology and Morbid Anatomy: Dr. Hebb. Post-mortem Demonstrations: Dr. Hebb. Materia [illegible] Pharmacology: Dr. Dixon. [illegible] Pharmacy: Mr. A. E. Tanner [illegible] Henslowe Wellington. Toxicology: Dr. H. Wilson Hake. Public Health: Dr. S. Monckton Copeman. Bacteriology: Dr. Bernstein. Anatomy: Dr. Thompson and Mr. Jenkins. Demonstrator of Practical Anatomy: Mr. Jenkins. Physiology: Dr. Halliburton. Practical Physiology and Histology: Dr. Halliburton, Dr. Lyle, Dr. Myers, and Dr. Rosenheim. Biology: Dr. Bottomley and Dr. Dendy. Chemistry and Practical Chemistry: Dr. Thomson, Mr. Jackson, and Mr. Kirkaldy. Physics: Mr. Allen, Mr. Nicol, and Dr. W. Wilson. Secretary and Librarian: Mr. W. Fryer.

Scholarships and Prizes.—At this school the first five items in the following list are for students entering in the Winter Session. The money value and subjects of examination are as follows: (*a*) Guthrie Entrance Scholarship open to Students under 25 years of age, £60, Latin; Mathematics, English, and Greek, French, or German; (*b*) and (*c*), two Entrance Scholarships, age of candidates and subjects of examination as above, £40 and £30 respectively; (*d*) Dental Scholarship, age of candidates and subjects of examination as above, £20; (*e*) Natural Science Prize, £60, subjects of Preliminary Scientific of University of London; (*f*) and (*g*), two Entrance Scholarships in Arts for Students entering in the Summer Session, £60 and £40 respectively—conditions as for the Guthrie Scholarship; (*h*) Free Presentation, open to Pupils of the Epsom Medical College and obtained by recommendation; (*i*) Entrance Scholarship, £40, Chemistry and Physics according to the synopsis of the Conjoint Board; (*j*) and (*k*), two University Scholarships open to University Students, £60 and 70 guineas respectively, Anatomy and Physiology; (*l*) Natural Science Prize, £60, subjects of Preliminary Scientific of University of London; (*m*) Sturges Prize in Clinical Medicine, about £6, Notes of Cases; (*n*) Clinical Surgery Prize, £5, Notes of Cases; (*o*) Chadwick Prize, £21 in books or instruments, Medicine and Surgery, including Pathology and Applied Anatomy and Physiology; (*p*) Frederic Bird Medal and Prize open to Fourth-year Students, £14 in medal and books or instruments—*Midwifery, Diseases of Women, Medicine, and* Pathology; (*q*) Abrahams Prize in Clinical Pathology, 5 guineas, a Paper and Tests in Practical Work; (*r*) Alfred Hughes Memorial Prize, open to Second-year Sudents, about £5 in books or instruments—Anatomy; (*s*) Carter Gold Medal and Prize for Botany, open to Students of not more than three years' attendance, gold medal and books of the joint value of £15; (*t*) Jelf Medal awarded to Third-year Students; (*u*) Second-year Scholarship, £20, Elementary Anatomy, Physiology, Histology, and Organic Chemistry; (*v*) Third-year Scholarship, £20, Anatomy, Physiology, Pharmacology, and Materia Medica; (*w*) Daniell Scholarship, tenable for two years, £20, Chemistry; and (*x*) Rabbeth Scholarship, open to first-year students, £20, Class Examinations in the Preliminary Scientific Course.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—The fee for the medical course for the University of London, after the completion of the First Medical Examination Course is £135 in one sum, or £145 in four instalments. The fee for the First Medical classes is £25. The fee for the course for the University of Durham, the Society of Apothecaries, and the Conjoint Colleges of Scotland, including Elementary Science, is £140 in one sum, or £150 in four instalments.

The hospital contains 165 beds, of which 78 are reserved for surgical, 64 for medical, 13 for gynæcological, six for ophthalmic, and four for isolation cases. The number of in-patients treated during the past year was 2218. There is also a department for attending women in their confinements at their own homes. Students can also attend the in-patient and out-patient practice of the New Hospital for Women.

Special classes for the First Medical Examination of the University of London are held and special courses of instruction in Anatomy, Physiology, and Practical Pharmacology are provided for students preparing for the Second Medical Examination of the University of London.

Students after qualification can hold at the Royal Free Hospital the posts of house physician, house surgeon, clinical assistants, anæsthetist and assistant anæsthetists, medical and surgical registrars, medical electrician, and museum curator; and at the Medical School the posts of demonstrators in the departments of Anatomy, Physiology, Chemistry, and museum curator. They can also hold posts at the New Hospital for Women, which is officered entirely by medical women.

The School buildings have been entirely rebuilt in recent years and there are spacious, well-equipped laboratories, which afford every facility for efficiency of teaching and practical work in all departments.

There are residential chambers at 8, Hunter-street, with accommodation for 17 students, and the Secretary can be consulted on the subject of other residences for students. There is a Tennis Club with a gravel court at the School, and also hockey, boating, and other clubs.

Staff.—Consulting Physician: Dr. S. West. Physicians: Dr. Harrington Sainsbury, Dr. J. W. Carr, and Dr. A. G. Phear. Assistant Physicians: Dr. Farquhar Buzzard and Dr. W. P. S. Branson. Consulting Surgeons: Mr. W. Rose and Mr. A. B. Barrow. Surgeons: Mr. J. Berry, Mr. E. W. Roughton, and Mr. W. H. Evans. Assistant Surgeons: Mr. T. Percy Legg and Mr. Cunning. Consulting Physician for Diseases of Women: Mrs. Scharlieb, M.S., M.D. Physician for Diseases of Women: Mrs. Vaughan-Sawyer, M.S., M.D. Assistant Physician for Diseases of Women: Mrs. Willey, M.S., M.D. Ophthalmic Surgeon: Mr. H. Work Dodd. Surgeon for Diseases of Throat, Nose, and Ear: Mr. E. W. Roughton. Surgeon for Diseases of Skin: Mr. W. H. Evans. Senior Resident Medical Officer: Mr D. W. Roy. Registrars: Miss Woodward, M.D., B.S., and Miss Turnbull, M.D., B.S. Dentist: Mr. T. C. Budden. Anæsthetists: Mrs. Berry, M.D., B.S., and Miss Gates, M.B., B.S. Secretary: Mr. C. W. Thies.

Lecturers.—At the School: Anatomy and Practical Anatomy: Mr. Parsons. Physiology and Practical Physiology: Miss Cullis, D.Sc. Chemistry: Miss C. de B. Evans, D.Sc. Practical Chemistry: Miss Widdows, B.Sc. Physics: Miss E. Stoney, M.A. Biology: Mr. Mudge, A.R.C.S. Materia Medica: Dr. R. H. P. Crawfurd. Practice of Medicine: Miss Cock, M.D., and Dr. J. W. Carr. Midwifery: Mrs. Scharlieb, M.S. Gynæcology: Mrs. Stanley Boyd, M.D. Forensic Medicine: Dr. Hawthorne. Toxicology: Dr. Wilson Hake. Practice of Surgery: Mr. Berry and Mr. Roughton. Operative Surgery: Mr. Roughton. Ophthalmic Surgery: (vacant). Pathology: Dr. L. S. Dudgeon. Mental Pathology: Dr. Hyslop. Tropical Diseases: Sir Patrick Manson. Operative Midwifery: Miss McCall, M.D., Mrs. Vaughan Sawyer, M.D., and Mrs. Willey, M.D., M.S. Demonstrator of Anatomy, Mrs. Addison, M.B., B.S.; of Physiology, Miss Simmons, B.Sc.; of Chemistry, Miss [illegible] Pathology: Dr. Buzzard. Bacteriology: Miss Chambers, M.D., B.S. Surgical Tutors: Mr. W. Evans, Mr. Legg, and Mr. Cunning. Medical Tutor: Dr. A. G. Phear. Demonstrator of Auscultation: Dr. Phear. Demonstrator of Practical Clinical Pathology: Miss Chambers, M.D., B.S. Practical Pathology: Miss D. Hare, M.D., B.S.

Dean of the School, Miss Cock, M.D.; Honorary Secretary, Dr. May Thorne; Secretary and Warden, Miss L. M. Brooks.

Scholarships and Prizes.—At this School candidates for the second item (*b*) on the following list must be (1) not more than 20 years of age on June 1st preceding the examination; (2) resident in the Metropolitan Police district; (3) Matriculated Students of the University of London; and (4) in need of an Exhibition for the prosecution of their medical studies. The third item (*c*) is given as the result of an examination held by the University of London in June to a student who has passed the First or Second Medical Examinations of that University held in the previous July or the July following the examination. Candidates are expected to read for the M.B., B.S. degree of the University of London. The money value and subjects of examination are as follows: (*a*) Entrance Scholarship, £30, English, Latin, Arithmetic, Euclid, and Algebra; (*b*) St. Dunstan's Medical Exhibition, tenable for three years, extendible to five years, £60, English, Latin, Arithmetic, Euclid, and Algebra; (*c*) Bostock Scholarship, tenable for two or four years, and next to be awarded in June, 1911, £60; (*d*) Mabel Webb Research Scholarship, tenable for one year and renewable, £30, Physiology, Chemistry, or Pathology; (*e*) Fanny Butler Scholarship, tenable for four years; Candidates must be willing to work in connexion with the Church of England Zenana Missionary Society; next award in September, 1909, £14 10*s.*; (*f*) John Byron Bursary, tenable from two to four years, for students already in the School requiring assistance for the prosecution of their medical studies, application to the Secretary by March 31st; next award in March, 1910, £20; (*g*) Helen Prideaux Scholarship, awarded every second year to a student who has become qualified during the two years immediately preceding the award, and to be spent in assisting the holder to further study, £40, Medicine, Surgery, Obstetric Medicine, and Pathology. Three Evans Prizes of £3 3*s.*, £2 2*s.*, and £1 1*s.* are given in alternate years on the results of the class examination in midwifery, and two Durham Prizes, value £5 and £3, are given in alternate years on the results of the class examination in gynæcology, and a prize of £5 is awarded in alternate years on the results of the class examination in Midwifery and Gynæcology respectively. The Evans Prize for Operative Midwifery, value £5 5*s.*, is awarded yearly. Prizes of £10 each are awarded yearly in Anatomy and Physiology. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help. Prizes and Certificates of Honour are awarded in each class at the end of the session.

UNIVERSITY OF DURHAM.

Two Diplomas and six degrees are conferred—viz., the Diploma in Public Health and the Diploma in Dental Surgery, and the degrees of Bachelor of Medicine, Bachelor of Surgery, Master of Surgery, Doctor of Medicine, Bachelor of Hygiene, and Doctor of Hygiene. These degrees are open both to Men and Women.

For the degree of *Bachelor of Medicine* there are four professional examinations. The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics. The subjects of the Second Examination are—Anatomy, Physiology, Materia Medica, Therapeutics, Pharmacology, Pharmacy. The subjects for the Third Examination are—Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology. The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children.

It is required that at least one of the five years of professional education shall be spent in attendance at the University College of Medicine, Newcastle-upon-Tyne. Candidates who have passed the First and Second Examinations of the University will be exempt from First and Second Examinations of the Conjoint Board.

For the degree of *Bachelor of Surgery* every candidate must have passed the examination for the degree of Bachelor of Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Regional Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master of Surgery* candidates must not be less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.S. They must also have obtained the degree of Bachelor of Surgery of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice. The subjects of examination are:—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor of Medicine* candidates must be not less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. In case they shall not have passed in one of these subjects at the Matriculation Examination for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.D. They must also have obtained the degree of Bachelor of Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must present an essay prepared entirely by himself, which must be typewritten, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the essay.

Doctor of Medicine (without residence).—The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under 40 years of age and shall have been in active practice for 15 years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, [illegible] Women and Children, Pathology (Medical [illegible] omy (Medical and Surgical), Medical [illegible] Toxicology. The fee will be 50 [illegible] 20 guineas will be retained if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees must give at least 28 days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-upon-Tyne. In the case of the M.D. (essay) examination candidates must send in their essays six weeks before the date of the examination.

Professors—Medicine: Sir G. H. Philipson, M.D., D.C.L. Surgery: F. Page, F.R.C.S. Physiology: T. Oliver, M.D. Anatomy: R. Howden, M.B. Midwifery: R. P. R. Lyle, M.D. Comparative Pathology: H. J. Hutchens, M.R.C.S.

Scholarships and Prizes.—In connexion with this University the following scholarships and prizes are awarded:—(*a*), (*b*), (*c*), and (*d*), Four Scholarships of £25 a year each, tenable for four years; the examination will be the September Matriculation Examination. Candidates must take English, Latin, Arithmetic, Euclid, Algebra, Geography, English History, with Greek or German, or both. (See College Calendar for special books.) Open to candidates desirous of being admitted as Medical Students. The successful candidates must take out their entire curriculum at the University of Durham College of Medicine, Newcastle upon-Tyne. (*e*) Pears Scholarship of £50 a year, tenable for three years; Matriculation Examination. —At the College of Medicine are: (*f*) Dickinson Scholarship, interest on £400 and gold medal; examination in Medicine, Surgery, Midwifery, and Pathology. *Open to full* students of the College of Medicine who have passed the third M.B. Examination. (*g*) Tulloch Scholarship, interest on £400; examination in Anatomy, Physiology, and Chemistry. No student is eligible who commenced his medical curriculum more than two academical years before the date of examination. (*h*) Charlton Memorial Scholarship, interest on £700; examination in Medicine. Open to full students of the College entered for the class on the Principles and Practice of Medicine. (*i*) Gibb Scholarship, interest on £500; awarded annually as a Scholarship in Pathology to full student who passes the best examination in that subject. No student is eligible after completion of his curriculum. (*j*) Luke Armstrong Memorial Scholarship, *interest on £680: original* essay on *some* subject in Comparative Pathology. (If no essay of sufficient *merit* be presented the scholarship may be awarded to the candidate who, in passing the first part of the Examination for the

B.Hy. Degree, ob[illegible] Comparative Path[illegible] Graduates in Med[illegible] degrees who have [illegible] whose age does [illegible] Scholarship, interest on £1000; original essay on any Surgical subject. Open to any graduate in Medicine or Surgery of the University or any student of the College of Medicine. [illegible] Scholarship [illegible] on Disease [illegible] Surgical Treatment. All Graduates in Medicine or Surgery of the University are eligible. (*m*) Gibson Prize, interest on £225; examination in subject of Midwifery and Diseases of Women and Children. Open to students who have attended one course of lectures on Midwifery and Diseases of Women and Children. (*n*) Turnbull Prize and Medal; examination in Surface Anatomy. Open to students at end of their second winter session.—At the Royal Infirmary is (*o*) Goyder Memorial Scholarship, interest on £325; awarded annually to student who most distinguishes himself in Clinical Medicine and Clinical Surgery at the Royal Infirmary.

Hygiene.—The regulations with regard to the degrees in Sanitary Science will be found under the section on Public Health.

Clinical Instruction.—THE COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—A new wing has been added to accommodate the departments of physiology and bacteriology. It also contains a students' gymnasium and a set of Students' Union rooms. The new Royal Victoria Infirmary, containing upwards of 400 beds, was opened by His Majesty King Edward VII. in 1906. In the new infirmary [illegible] study of [illegible] ordinary [illegible] and Prizes [illegible] Scholarships, value £25, tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Pears Scholarship, value £50 a year, tenable for three years (when vacant). The Dickinson Scholarship, value interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680, for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late Dr. George Yeoman Heath, President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year; the next award will be in 1910. The Gibson Prize, interest on £225, in the department of Midwifery and Diseases of Women and Children. The Turnbull Prize and Medal for Surface Anatomy. At the end of each session Prizes of Books are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

NEWCASTLE-UPON-TYNE ROYAL VICTORIA INFIRMARY.—This Infirmary was founded in 1751 but has been recently rebuilt, the new hospital being opened in 1906. The number of beds is 425. The number of in-patients annually is 7500 and of out-patients 100,000. The medical students of the University of Durham attend the practice of this hospital. C[illegible] Surgeons [illegible] Tutorial [illegible] given in [illegible] opportunity [illegible] been spared [illegible] to medical and surgical in-patient and out-patient departments the following special departments are fully equipped fo[illegible] Throat and Ear, Skin, C[illegible] and Bacteriological. T[illegible]llowing laboratories: 1. *Special Pathological Laboratory*, attached to the post-mortem r[illegible] 2. [illegible]ry, in which all clinical [illegible] carried out—opsonic i[illegible] treatment by vaccines and serums, &c. 3. There is in addition a Clinical Laboratory attached to each ward and to the out-patient department. There are five operating theatres in use in the hospital, three large theatres, a smaller one for emergencies, and an out-patient theatre. The surgical practice is especially good; more than 6000 surgical operations were performed in the last 12 months. Every facility is given to students to take out the full or any part of the hospital curriculum, and clerkships or assistantships in any of the several special departments are open to undergraduates or graduates for periods of from one to three months. There are 11 resident medical and surgical officers, three of whom are paid, and preference for these appointments is given to students who have fulfilled their curriculum in the hospital. The sessions open on May 1st and Oct. 1st of each year. Applications for detailed information should be made to the Dean, Mr. H. B. Angus, at the hospital. The following is the staff of the hospital:—Physicians: Dr. David Drummond, Sir Thomas Oliver, Dr. T. Beattie, and Dr. W. E. Hume. Assistant Physicians: Dr. Horsley Drummond, Dr. Alfred Parkin, Dr. George Hall, and Dr. T. M. Allison. Surgeons: Mr. J. Rutherford Morison, Mr. A. M. Martin, Mr. H. B. Angus, and Mr. J. V. W. Rutherford. [illegible] Throat and Ear Department: Surgeon: Mr. G. W. Ridley; Assistant Surgeon: Mr. S. S. Whillis. Gynæcological Department: Dr. R. P. R. Lyle. Skin Department: Physician: Dr. Robert A. Bolam; Assistant Physician: Dr. D. W. Patterson. Orthopædic Department: Mr. A. M. Martin. Electrical Department: Dr. W. D. Arnison. Pathologist: Dr. Stuart McDonald. Bacteriologist: Dr. H. J. Slade. Pathological and Analytical Chemist: Mr. P. P. Bedson, D.Sc. [illegible] Phillips, Dr. H[illegible] Medical Registr[illegible] Gurney. Surgical Registrars: Mr. J. W. Heslop, Mr. J. C. Stewart, Mr. R. J. Willan, Mr. Hamilton Drummond, and Mr. F. C. Pybus.

There are other institutions at which the student of medicine of the University of Durham can receive clinical instruction. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth. A special course of instruction is given in the City Hospital for Infectious Diseases by the Superintendent, [illegible]

Assistant Surgeons: Mr. J. B. Hartley and Mr. Stanley Robson. Honorary Anæsthetists: Dr. O. W. Ogden and Mr. T. H. Livingstone. House Surgeon: Mr. A. E. Burroughs. Matron: Miss C. Crump. Secretary: Mr. Richard Smith, 61, Westgate-road, Newcastle-on-Tyne. Out-patients for 1908, 7437; in-patients, 349.

UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., Ch.B., M.D., Ch.M., and also a degree and a diploma in Public Health. The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of [illegible] other Universities as [illegible] and [illegible]s at [illegible] classes at the University. The fifth year may be spent at any other school or schools of medicine recognised by the

University. The students of the Medical Faculty can be members of the University Club, the University Athletic Club, and the University Officers' Training Corps, while they possess a guild—the Guild of Undergraduates—which is designed to be a recognised medium of communication between the teachers and the taught. The University Medical Society and the Dental Students' Society also offer opportunities of coöperation for mutual benefit.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—The student must have passed either the Matriculation Examination of the University or one of the following examinations. For the present the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of medical students, provided always that such examination shall have included the subjects of English, Latin, Mathematics, and any one of the following: Greek, French, German, or any other modern foreign language, together with Chemistry or Experimental Mechanics, or some other branch of Experimental Physics, and that all the subjects have been passed at one examination: (*a*) the previous examination of the University of Cambridge; (*b*) responsions of the University of Oxford; (*c*) the Preliminary or Matriculation Examination of a recognised University; (*d*) the (Higher) Certificate of the Oxford and Cambridge Examinations Board; (*e*) the Oxford or Cambridge Senior Local Examination. A Matriculation Examination will be held on Sept. 13th, 1909, and succeeding days. First Examination.—Chemistry and Physics and Elementary Biology. Second Examination.—Anatomy and Physiology. Third Examination.—Pathology and Bacteriology, Materia Medica and Practical Pharmacy. Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, and Public Health. Two years' hospital work must have been accomplished. Final Examination.—Medicine, Surgery, Midwifery, Gynæcology, Therapeutics, Mental Diseases, and Ophthalmology. Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital and lunatic asylum. Vaccination instruction must be taken out and courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

Degrees of Doctor of Medicine and Master of Surgery.—At the end of one year from the date of having passed the final M.B., Ch.B. examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these degrees will be required to comply with the following regulations. Every candidate for the degree of M.D. shall present a thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations.

A thesis may be presented in any of the following departments of study: (*a*) Anatomy, including Comparative Anatomy, (*b*) Physiology, (*c*) Human or Comparative Pathology, (*d*) Bacteriology, (*e*) Pharmacology, (*f*) Therapeutics, (*g*) Medicine, (*h*) Mental Diseases, (*i*) Preventive Medicine or Public Health, (*j*) Toxicology, (*k*) Legal Medicine, (*l*) Midwifery.

Candidates for the degree of Ch.M. are required to comply with the following regulations:—At the end of one year from the date of having passed the final M.B., Ch.B. Examination candidates will be eligible to present themselves for the higher degree of Master of Surgery. Candidates for this degree will be required to comply with the following regulations: 1. Every candidate shall present a thesis, embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below; in addition the candidates will be required to pass a general examination in Principles and Practice of Surgery and to perform operations on the cadaver. 2. It will be in the power of the board of examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. 3. The candidate may be examined in that department of the medical curriculum from which the subject of his thesis is chosen and the examiners may require to see the notes of original observations on which the thesis is based, (*a*) Surgery, (*b*) Pathology, (*c*) Bacteriology, (*d*) Gynæcology, (*e*) Ophthalmology.

Degree in Public Health.—For the regulations for this degree and for the diploma in the same subject see p. 667.

Fees.—Matriculation, £2; First Examination, £2; Second Examination, £2; Third Examination, £2; Fourth Examination, £2; Final Examination, £8; M.D. or Ch.M., £10.

Professors—Physics: J H. Poynting, Sc.D., F.R.S. Chemistry: P. H. Frankland, Ph.D., F.R.S. Elementary Biology: (vacant). Medicine: R. Saundby, M.D., and A. H. Carter, M.D. Surgery: G. Barling, F.R.C.S., and Jordan Lloyd, F.R.C.S. Anatomy: A. Robinson, M.D. Physiology: E. W. Wace Carlier, M.D. Therapeutics: A. Foxwell, M.D. Forensic Medicine: J. T. J. Morrison, F.R.C.S. Hygiene and Public Health: A. Bostock Hill, M.D. Midwifery: E. Malins, M.D. Gynæcology: J. W. Taylor, F.R.C.S. Pathology: R. F C. Leith, F.R.C.P. Edin Lunacy and Mental Disease: E. B. Whitcombe, M.B. Ophthalmology: Priestley Smith, F.R.C.S.

At the University of Birmingh [illegible] larships are awarded:—(*a*) Myers [illegible] of £150, tenable for one year, awarded by vote of committee to M.B., Ch.B. Birm., B.Sc. candidates, tenable at one of certain German universities; (*b*) Ingleby Scholarship of £10, tenable for one year, awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of Midwifery and Gynæcology; (*c*) Sydenham Scholarship of £42, tenable for three years, award of Coun to orphan sons of medical practitioners; (*d*) Sands C Scholarship of £42, tenable for three years, awarded to t candidate, not being more than 19 years of age, taking t highest marks at the June Matriculation; (*e*) Dental Schola ship of £37 10*s*., tenable for three years, Open Competiti Examination in subjects learned during apprenticeship; ((*g*), (*h*), and (*i*) Four Queen's Scholarships of £10 10*s*. eac awarded to candidates taking highest "first-class" marks Second, Third, Fourth, and Final M.B. Examinations; a (*j*) George Henry Marshall Scholarship of £10, award annually, for the encouragement of Research Work Ophthalmology.

Clinical Instruction.—The medical students of the Un versity receive their clinical instruction by attending t amalgamated practice of the General Hospital and t Queen's Hospital, details of which follow.

The clinical instruction of the Birmingham medic students is carried on under the direction of the Birmingha Clinical Board. The hospitals present an excellent field f clinical work, possessing more than 500 beds, treating ann ally 8000 in-patients and 100,000 out-patients. The student spend part of their curriculum in each hospital, and th have every opportunity of acquiring a varied, full, and prac tical knowledge of their professional work. The curriculu is adapted in the first place to meet the needs of the student of the University of Birmingham, but it is also well adapted t the requirements of students preparing for the examination of all other universities and licensing bodies. At the Genera Hospital there are open to the students the following appointments: A resident medical officer, elected annually (£70); a resident surgical officer, elected annually and eligible fo re-election for three years (£100); a resident pathologist, elected for six months (£50); three surgical casualty officers, elected annually and eligible for re-election (£50); three house physicians and four house surgeons hold office for six months, receiving board, residence, and salaries at the rate of £50 a year; one house surgeon to the gynæcological, ophthalmic, and aural departments is elected every six months, receiving board, residence, and a salary of £50 a year; two assistant house surgeons are elected every three months, receiving board, residence, and salaries at the rate of £40 a year; a resident medical officer at the Jaffray Hospital, who is elected annually but is eligible for re-election, and who receives £150 a year; and a resident medical assistant at this hospital, who is not necessarily qualified, is provided with board and residence, and holds office for three months. At the Queen's Hospital there are open to the student the following appointments: Three house physicians, three house surgeons, and one obstetric and ophthalmic house surgeon, who hold office for six months and have salaries at the rate of £50 a year. Thirty-eight other appointments of varying value are at the City Workhouse and Workhouse Infirmary, at the Birmingham General and Branch Dispensaries, at the Birmingham Lunatic Asylums, at the City Fever Hospitals, at the Children's Hospital, at the Birmingham and Midland Eye Hospital, at the Orthopædic and Spinal Hospital, at the Maternity Hospital, and at the Ear and Throat Hospital.

THE BIRMINGHAM GENERAL HOSPITAL.—The General Hospital contains 349 beds, and of these 327 are in daily use, upwards of 5000 in-patients passing through the wards yearly. There are special wards for children, for gynæcological, septic and infectious cases, and special beds are reserved for eye, ear, and skin cases. Some 60,000 out-patients are treated there annually. The post-mortem department is in a separate building. It consists of a mortuary with a small chapel, a post-mortem room proper, and laboratories for bacteriology and morbid histology. In addition there are separate rooms in the main building, adjoining the various medical and surgical wards, for clinical pathology and these are under the direction of special officers. There are four operating theatres, all designed and fitted on the most modern lines. In connexion with the hospital is the Jaffray Suburban Hospital of 52 beds at Gravelly Hill. The arrangements for clinical teaching at this hospital are very thorough. In addition to the clinical teaching given in the wards and out-patient department by the honorary staff medical and surgical tutorial classes are held for senior and junior students, while [illegible] departments by [illegible]

Staff of Gen[illegible] Walter Foster. [illegible] Malins. Physi[illegible] M. Simon, Dr. [illegible] Short. Surgeons: Sir Thomas F. Chavasse, Mr. Gilbert Barling, Mr. William F. Haslam, and Mr. George Heaton. Obstetric Physician: Dr. Thomas Wilson. Ophthalmic Surgeon: Dr. D. C. Lloyd-Owen. Aural Surgeon and Laryngologist: Dr. F. W. Foxcroft. Physician in Charge of Skin Department: Dr. A. Douglas Heath. Assistant Physicians: Dr. James W. Russell and Dr. A. Stanley Barnes, Dr. William H. Wynn and Dr. J. E. H. Sawyer. Assistant Surgeons: Mr. Albert Lucas, Mr. Leonard P. Gamgee, Mr. F. Victor Milward, and Mr. Frank Barnes. Assistant Obstetric Officer: Mr. H. B. Whitehouse, F.R.C.S. Visiting Pathologist: (vacant). Anæsthetists: Dr. Sydney Haynes and Dr. W. J. McCardie. Surgical Photographer and Radiographer: Mr. J. Hall Edwards. Dental Surgeon: Mr. A. T. Hilder.

THE QUEEN'S HOSPITAL.—Similar arrangements for clinical teaching are made here, and the material also is excellent. Ward and tutorial classes are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons. There are also special [illegible]

[illegible] Mr. Priestley Smith. Physicians: Dr. Arthur Foxwell, Dr. O. J. Kauffmann, and Dr. J. Douglas Stanley. Surgeons: Mr. Jordan Lloyd, Mr. J. T. J. Morrison, and Mr. C. A. Leedham-Green. Ophthalmic Surgeon: Mr. Wilfrid Allport. Obstetric Physician: Dr. C. E. Purslow. Physicians for Out-patients: Dr. J. G. Emanuel and Dr. L. G. J. Mackey. Surgeons for Out-patients: Mr. W. Billington, Mr. A. W. Nuthall, and Mr. B. J. Ward. Pathologist: Dr. L. G. J. Mackey. Radiographer: Mr. F. Emerys-Jones.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Honorary Consulting Physician: Dr. R. Saundby. Honorary Consulting Surgeon: Mr. D. C. Lloyd-Owen. Surgeons: Mr. H. Eales, Mr. E. W. Wood-White, and Mr. J. Jameson Evans. Dental Surgeon: W. Madin, B.D.S. Anæsthetist: Dr. S. W. Haynes. This hospital possesses 105 beds, and there is an average daily attendance of out-patients of 217. This institution is recognised by Universities and the Royal College of Surgeons, England, and Royal College of Physicians, London, as an ophthalmic hospital at which clinical instruction in ophthalmology may be received. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations.

UNIVERSITY OF LIVERPOOL.

The student must pass either (1) the University Matricula[illegible] (2) [illegible] Gradua[illegible] or [illegible] of London, or (4) the Higher Certificate Examination of Oxford and Cambridge Joint Board, or (5) the Senior Local Examination of Oxford or Cambridge, or (6) some other examination of equal standard accepted by the Joint Matriculation Board. [illegible] sequent to passing t[illegible] r of [illegible] ctor [illegible] of

Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of 21 years on the day of graduation. At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination. The other three years may be passed at any college or m[illegible] University. [illegible] respectively: the First Examination, the Second Examination, and the Final Examination. The fee is £5 for each examination. The subjects of the First Examination are: (1) Chemistry, Inorganic and Organic; (2) Biology (Zoology and Botany); and (3) Physics. The examination is divided into two parts—namely, (1) chemistry and physics, and (2) biology; and candidates may pass in these parts separately. The subjects of the Second Examination are (*a*) Anatomy and Physiology (including Physiological Chemistry and Histology), and (*b*) Materia Medica, Pharmacy, and Pharmacology. Candidates may pass in *a* or *b* separately. The subjects for the Final Examination are (1) General Path[illegible] (2) T[illegible]rapeutics; (3) Forensic [illegible] Health; (4) Obstetrics [illegible]y, Systematic, Clinical, and Practical; and (6) Medicine, Systematic, and Clinical, including Mental Diseases and Diseases of Children. The Final Examination is divided into three parts, the first consisting of subject (1), the second of subjects (2) and (3) the third of subjects (4), (5), and (6). Candidates may pass in these parts separately. Candidates for the third part must have completed the fifth year of medical study.

Degrees of Doctor of Medicine and Master of Surgery.—No candidate will be admitted to the degrees of Doctor of Medicine or Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examinations for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine: provided always that original work published in scientific journals or separately shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. No candidate shall be admitted to the degree unless his application after report from the Faculty of Medicine shall have been accepted by the Senate. Candidates may be required to undergo examination in any subject connected with the dissertation. The subjects of examination for the degree of Master of Surgery are (1) Surgical Anatomy, (2) Surgery, (3) Operative Surgery, (4) Clinical Surgery, (5) Ophthalmology, and (6) Pathology and Bacteriology.

Professors—Physiology: C. S. Sherrington, M.D., F.R.S. Physics: L. R. Wilberforce, M.A. Chemistry: J. Campbell Brown, D.Sc. Natural History: W. A. Herdman, D.Sc., F.R.S. *Botany: R. J. H. Gibson, M.A. Anatomy*: A. Melville Paterson, M.D. Medicine: T. Robinson Glynn, M.D. Surgery: Rushton Parker, F.R.C.S. Pathology: Sir Rubert Boyce, M.B., F.R.S. Midwifery and Gynæcology: H. Briggs, M.D. Therapeutics: J. H. Abram, M.D. Hygiene: E. W. Hope, D.Sc. Forensic Medicine: R. J. M. Buchanan, M.D. Tropical Medicine: Major Ronald Ross, C.B., F.R.S. Bio-Chemistry: B. Moore, D.Sc. Comparative Pathology: H. E. Annett, M.D.

At this University the following Scholarships and Fellow[illegible] Joint Matriculation Board Examination held in July, open to First M.B. Course Students; (*c*) Lyon Jones Scholarship, No. 1, of £21 per annum, tenable for two years, Competitive Examination *among Junior* Students in First M.B. Subjects, Perpetual Course at the University; (*d*) Lyon Jones [illegible] students; (*f*) Unive [illegible] £25 for one year, awarded on results of [illegible] for the degrees; (*g*) Holt Fellowships, Physiology and Pathology, of £100 each, for one year; this and the following six Fellowships are awarded by vote of Faculty to Student after graduation, for Teaching and Original Research; (*h*) Gee Fellowship, Anatomy, of £100, for one year, for Teaching and Research; (*i*) Alexander Fellowship, Pathology, of £100, for one year, for Research in Pathology, as are also the following four Fellowships; (*j*) Johnston Colonial Fellowship, Pathology and Bacteriology, of £100, for one year; (*k*) John W. Garrett International Fellowship, Physiology and Pathology, of £100, for one year; (*l*) Thelwall Thomas Fellowship, Surgical Pathology, of £100, for one year; (*m*) Ethel Boyce Fellowship in Gynæcological Pathology, of £100, for one year; the last two are awarded by vote of Faculty to graduate, and are for Research.

Medical School Buildings.—Spacious and well-equipped class-rooms and laboratories have been erected for the practical study of all the important scientific subjects which form the basis of medicine. Medical research has also been endowed with several new laboratories in which students can pursue research work after graduation. All the laboratories and class-rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle. The most recent additions are the Johnston Laboratories for Experimental Medicine, Bio-chemistry, and Comparative Pathology and the new building for Anatomy, Surgery, Toxicology, Ophthalmology and Dental subjects. The departments of Physiology and Pathology are accommodated in the large block provided by the generosity of the late Rev. S. A. Thompson Yates in 1898. The Anatomical department is situated in a separate block and has a complete suite of rooms, including a large and well-stocked museum and a well-lighted dissecting room on the upper floor measuring 70 by 40 feet.

Fellowships and Scholarships.—Fellowships, scholarships, and prizes of over £1000 are awarded annually. A Holt Fellowship in Pathology and Surgery of the value of £100 for one year is awarded annually by the Medical Faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the pathological department. A Holt Fellowship in Physiology, awarded under similar conditions of the value of £100 for one year. A Robert Gee Fellowship in Anatomy, awarded under similar conditions, also of the value of £100 for one year. An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. A Johnston Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). A John W. Garrett International Fellowship in Physiology and Pathology (£100 a year, renewable). An Ethel Boyce Fellowship in Gynæcological Pathology (£100 a year, renewable). A Thelwall Thomas Fellowship (£100 a year, renewable) in Surgical Pathology. Two Lyon Jones Scholarships of the value of £21 each for two years are awarded annually—a Junior Scholarship, open at the end of the first year of study to Liverpool University students, on the subjects of the First M.B. Examinations, and a Senior Scholarship, open to all students in the school at the end of the second or third year of study, on the subjects of Anatomy, Physiology, and Therapeutics. A University Scholarship of £25 awarded on the results of the second examination for the degree. The Derby Exhibition of £15 for one year is awarded in Clinical Medicine and Surgery in alternate years. Students may compete in their fourth and fifth years. A Clinical School Exhibition of £15 for one year awarded under similar conditions. The Torr Gold Medal in Anatomy, the George Holt medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases. Two Robert Gee Entrance Scholarships of the value each of £25 per annum for two years are offered annually for competition. The holder is required to take out the Course for the University Degrees in Medicine. Communications should be addressed to the Dean, Mr. K. W. Monsarrat, The University, Liverpool.

Clinical Instruction.—The Clinical School of the University now consists of four general hospitals—the Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, and the Stanley Hospital; and of five special hospitals—the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children, St. Paul's Eye and Ear Hospital, and St. George's Hospital for Skin Diseases. These hospitals contain in all a total of 1127 beds. The organisation of these hospitals to form one teaching institution provides the medical student and the medical practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom. All the hospitals are within easy access from the University; those which are situated at any distance are readily reached by the tramway service of the city. The period of hospital practice extends over the last three years of medical study. During the first two years of this period no student will be permitted to change his attendance from one general hospital to another except at the commencement of an academic term. It is a regulation of the school that not more than five of the six terms of these two years shall be spent at any single general hospital. During the final year of hospital practice a student is permitted to attend the practice of all the general hospitals without restriction. The regulations demand only that his attendance shall be regular and to the satisfaction of the Hospitals' Board. There are a large number of appointments to house physicianships and surgeonships both at the general and special hospitals which are open to qualified students of the school. These appointments (20) in most cases carry salaries ranging from £60 to £100 per annum. Applications for further information regarding the Medical Curriculum should be addressed to the Dean of the Faculty of Medicine.

School of Veterinary Medicine.—A school of Veterinary Medicine in connexion with the University was opened in October, 1904; full courses of instruction for the Veterinary Curriculum will be provided and students will be prepared for the M.R.C.V.S. A diploma in Veterinary Hygiene is now granted by the University.

Public Health Department.—This is located in a separate building known as Ashton Hall in which full courses of instruction are given to D.P.H. students for the D.P.H. of the University and the diplomas of other Examining Boards (see p. 667).

Special Diplomas.—The [illegible] in Anatomy, Bacteriology, [illegible] A special course of study of three terms' duration is required in the subject chosen for the diploma and allied subjects.

School of Pharmacy.—Complete courses of instruction are provided adapted to the requirements of candidates preparing for either the Minor or Major Examinations of the Pharmaceutical Society of Great Britain.

Prospectuses and further information may be had on application to the Dean of the Faculty of Medicine, University of Liverpool.

Royal Infirmary Staff.—Consulting Physicians: Dr. A. T. H. Waters, Dr. T. R. Glynn, and Dr. R. Caton. Physicians: Sir James Barr, M.D., Dr. T. R. Bradshaw, and Dr. J. H. Abram. Assistant Physicians: Dr. R. J. M. Buchanan and Dr. John Hay. Consulting Surgeon: Mr. R. Parker. Surgeons: Mr. F. T. Paul, Mr R. A. Bickersteth, and Mr. W. T. Thomas. Assistant Surgeons: Mr. T. C. Littler-Jones and Mr. R. E. Kelly. Gynæcological Surgeon: Mr. T. B. Grimsdale. Assistant Gynæcological Surgeon: Mr. W. B. Bell. Ophthalmic Surgeon: Mr. T. H. Bickerton. Surgeon to the Throat Department: Mr. J. M. Hunt. Physician to the Skin Department: Dr. L. Roberts. Dental Surgeon: Mr. E. J. M. Phillips. Pathologists: Sir R. W. Boyce and Dr. E. Glynn. Anæsthetists: Mr. W. Fingland, Mr. F. W. Bailey, Mr. H. Armstrong, and Mr. A. J. O'Leary.

David Lewis Northern Hospital Staff.—Physicians: Dr. T. Bushby and Dr. W. B. Warrington. Consulting Surgeons: Mr. W. M. Campbell and Mr. C. Puzey. Surgeons: Mr. D. Harrison, Mr. R. W. Murray and Mr. K. W. Monsarrat. Consulting Ophthalmic Surgeon: Mr. A. N. Walker. Surgeon to the Orthopædic Department: Mr. E. Broad. Dental Surgeon: Mr. W. Matthews. Pathologists: Dr. H. L. Murray and Dr. J. Owen. Bacteriologist: Dr. C. A. Hill. Anæsthetists: Mr. G. B. Robinson, Mr. R. Stevenson, and Mr. V. C. de Boinville. Medical Tutor: Dr. P. Hick. Surgical Tutor: Mr. T. St. J. Barry.

Royal Southern Hospital Staff.—Consulting Physicians: Dr. W. Williams and Dr. William Carter. Consulting Surgeon: Mr. R. Hamilton. Physicians: Dr. J. W. Macalister, Dr. J. L. Roberts, and Professor Ronald Ross. Surgeons: Dr. W. Alexander, Mr. R. Jones, and Mr. G. P. Newbolt. Physician to the Skin Department: Dr. F. H. Barendt.

Consulting Ophthalmic Surgeon: Mr. R. Williams. Con- [illegible] Medical [illegible] sulting [illegible] newan. [illegible] Mr. J [illegible] F. M. Gardner-Medwin, and Dr. S. A. Smith.

Stanley Hospital Staff.—Consulting Physicians: Dr. R. J. Richardson and Dr. W. [illegible] Mr. J. Bark and Mr. K. [illegible] A. G. Gullan and Dr. J [illegible] Larkin and Mr. D. [illegible] Physician: Dr. J. Grimsl [illegible] McDougall. Dentist: Mr. J. P. Roberts.

School of Tropical Medicine.—The school is affiliated with the University of Liverpool and the Royal Southern Hospital of Liverpool. Three courses of instruction are given every year. Two of these last for three full months and are called respectively the Lent Course, from Jan. 6th to April 5th; and the Autumn Course, from Sept. 15th to Dec. 13th. The Third Course, called the Short Course, lasts one month, from June 1st to the 30th. The full course consists (1) of a systematic series of lectures on [illegible] the Professor [illegible] of additional [illegible] pecial Indian Diseases, deli [illegible] (3) of systematic lectures and [illegible] Pathology and Parasitology [illegible] Lecturer at the University; (4) of similar instruction on Medical Entomology by the Lecturer on Economic Entomology at the University; (5) of Practical Work on the Bacteriology of T [illegible] the [illegible] clin [illegible] Royal Southern Hospital by the Physician in charge of the Tropical Ward, the Professor, and the Walter Myers Lecturer. The instruction given occupies six hours a day for five days a week during the course. Teaching under headings 3, 4, and 5 above is delivered in the laboratory of the school at the University, which contains accommodation for 30 students, with all necessary appurtenances, including a well equipped museum, a class library, and access to [illegible] library. Teaching under heading [illegible] ward and the attached clinical [illegible] Southern Hospital on two or three afternoons a week. At the end of each course an examination is held by the University for its diploma of Tropical Medicine (D.T.M.), which is open only [illegible] course of instruction of [illegible] three days and consists [illegible] edicine, Tropical Pathology, and Tropical Sanitation and Entomology respectively; (2) of a clinical examination; and (3) of an oral examina- [illegible] for the ful [illegible] extra char [illegible] required. [illegible] cations sho [illegible] University of Liverpool, from whom prospectuses may be obtained. Two University Fellowships of £100 a year each are open to students of the school, amongst others. Accommodation for research work is to be had both at the University Laboratory of the school and at its Research Laboratories at Runcorn (16 miles distant from Liverpool). Since it was instituted nine years ago the school has employed 25 different investigators paid out of its funds and has despatched to the tropics 21 scientific expeditions, many of the workers ha [illegible] dents. The work done by [illegible] al memoirs with many p [illegible] books and numerous arti [illegible] 1906 the [illegible] the "Annals of Tropical [illegible] ished by the Committee [illegible] (apply to the Secretary, [illegible] ol). The Mary Kingsley [illegible] for distinguished work in [illegible] e, and has been given to Sir David Bruce, Professor Koch, Dr. Laveran, and Sir Patrick Manson.

THE VICTORIA UNIVERSITY OF MANCHESTER.

Four degrees in Medicine and Surgery are conferred by the University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Matriculation Examination (Faculty of Medicine), or to have passed such other examination as may be recognised by the University for this purpose.[2]

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will have attained the age of 21 years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination.

The First Examination.—The subjects of examination are as follows:—(1) Inorganic Chemistry and Physics; (2) Biology; and (3) Elementary Organic Chemistry and Bio-Chemistry. Candidates must have attended during at least one year courses both of lectures and of laboratory [illegible] are as follows:—(1) Anatomy; (2) Physiology, including [illegible] istology. Candidates may pass [illegible] cology and Therapeutics; (3) [illegible] ons. [illegible] of examination are [illegible] and Clinical (in- [illegible] (2) Sur- [illegible] trics and [illegible] Forensic [illegible] may be taken separately under certain conditions.

Candidates for the Final Examination must have completed the fifth year of medical study.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates may elect either (1) to present an original dissertation; or (2) to undergo an examination. The dissertation must embody the results of personal observation or original research, either in some department of medicine or of some science directly relative to medicine. The examination, which will be partly written, partly practical, is in the Principles and Practi [illegible] in some other subject to [illegible]

Degree of Master of [illegible] ible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; and (6) Pathology and Bacteriology.

Professors—Physics: E. Rutherford, D.Sc., F.R.S. Chemistry: H. B. Dixon, M.A., F.R.S. Organic Chemistry: W. H. Perkin, D.Sc., F.R.S. Zoology: S. J. Hickson, D.Sc., F.R.S. Botany: F. E. Weiss, D.Sc.

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[2] [illegible] exemption from the Matriculation Examina- [illegible]

Physiology: W. Stirling, D.Sc. Anatomy: Grafton Elliot Smith, M.A., M.D., F.R.S. Materia Medica: R. B. Wild, M.D. Comparative Pathology and Bacteriology: A. S. Delépine, M.Sc. Pathology: J. Lorrain Smith, M.D. Clinical Medicine: Graham Steell, M.D. Systematic Medicine: George R. Murray, M.A., M.D. Systematic Surgery: G. A. Wright, M.B., F.R.C.S. Clinical Surgery: F. A. Southam, M.B., F.R.C.S. Obstetrics and Gynæcology: Sir W. J. Sinclair, M.D. Forensic Medicine: J. Dixon Mann, M.D.

Communications should be addressed to the Registrar, The University, Manchester.

Scholarships, Fellowships, and Prizes.—At this University there are 22 Foundation Scholarships, 12 Exhibitions, five being for subjects connected with medical study, a Surgical Prize, a Fellowship, Research Fellowships in Public Health, and Honorary Research Fellowships. 13 Scholarships are Entrance Scholarships, three are Medical, and there are one each for Surgery, Biology, Physiology, and Diseases of Children, and one General Medical and Surgical. Three of the Exhibitions are for Physiology, one for Anatomy, and one for French and German. The Surgical Prize, named "The Dumville," is awarded for the subjects of Systematic, Practical, and Operative Surgery, Surgical Anatomy, and Surgical Pathology, £15. The Leech Fellowship is awarded annually for excellence and promise in one or more of the subjects of the Second or Final M.B. Examination (£100) and the Honorary Research Fellowships, tenable for two years, conferring the right of free use of the laboratories, are awarded generally in October on application, with evidence of capacity for independent investigation.

The following entrance scholarships are offered for award to persons of either sex proposing to enter a medical course of study at the University:—Seaton—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years. Subjects as in Dalton. Dreschfeld Memorial—£30, tenable for one year. Subjects: those of July Matriculation Examination. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar, and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). Dora Muir.—£25 per annum, tenable for three years (open to women only). Candidates may select such of the subjects as they desire from amongst those set for the other Entrance Scholarships. James Gaskill.—£35, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics, Chemistry. Credit given for knowledge of Classics, Elements of English Language, Literature, History, and French and German. Manchester Grammar School.—£25 per annum, tenable for three years. The examinations for all these scholarships are held in the month of May. Kay-Shuttleworth (Sir James Phillips).—£30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics, Chemistry. Entrance Scholarships in Medicine.—One Scholarship in each year will be offered for proficiency in Arts or Science. The Scholarships are of the value of £100 each, which will be set off against fees as follows: £60 against the University fees and £40 against the Infirmary fees.

The Platt Biological Scholarship of £50 for one year is awarded to the candidate who shows the most promise of ability for prosecuting original search in Zoology and Botany, and the holder is to devote his time to research in Zoology or Botany. The Robert Platt Physiological Scholarship of £50 for two years, with the subjects of Physiology and Comparative Anatomy, is open to candidates whether or not previously students of the University. There are two Dauntesey Medical Scholarships of £35 each for one year, with the subjects of Zoology, Botany, and Chemistry. These Scholarships are open to all students preparing for a medical course who shall not have attended lectures or laboratory courses on Human Anatomy or Physiology, or a purely medical or surgical course in the University or in any other medical school in the United Kingdom. Candidates must not be more than 25 years of age on Oct. 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies. The Turner Scholarship of £20 for students who have completed a full course of medical study in the University has the following subjects: Medicine, Pathology (written and practical), Obstetrics, Practical Surgery, Ophthalmology, Forensic Medicine, and Public Health. The John Henry Agnew Scholarship of £30 is awarded on the results of an examination, partly written and partly clinical, on Diseases of Children, Medical and Surgical, and is open for competition annually to all students in the medical department who have pursued a regular course of medical study in the University extending over a period of not less than four years or more than six years, and who have attended the course of lectures on Diseases of Children. The Ashby Memorial Scholarship, value £100, is open to duly qualified medical men and women who intend to pursue research in diseases of children.

The Professor Tom Jones Memorial Surgical Scholarship of £100 for one year is awarded to the candidate elected on the result of evidence submitted by him, and he must have either graduated in the University or have obtained the Diploma of the Conjoint Colleges. The Graduate Scholarship in Medicine of the value of £25 to £50 for one year is awarded on the results of the Second Examination for M.B., Ch.B. The Theodores Exhibition of £15 for one year has the subjects of French and German, and the successful candidate is required to enter for a regular University course. There are two Robert Platt Exhibitions of £15 each for first and second-year students in physiology, and the Sydney Renshaw Exhibition of £15 is for second-year students in physiology. The Professor Tom Jones Exhibition in Anatomy, value £25, is for first-year students in anatomy. The Dumville Surgical Prize of £15 is awarded after examination in Systematic, Practical and Operative Surgery, Surgical Anatomy, and Surgical Pathology. A gold medal is awarded for distinction on obtaining the degree of M.D.

The Medical School.—This medical school is located in a large building, which forms a part of the University. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, a large extension of the school buildings was made in 1895. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating 50 students, completely lighted from both sides and also from the roof, equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, [illegible] s, has been provided, and the [illegible] students is supplemented by the [illegible] room.

[illegible] linical and practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital, a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted in the Infirmary, which in the new buildings together with the associated hospitals at Cheadle will contain 1158 beds, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary.

Public Health.—The regulations with regard to the Degrees in Sanitary Science will be found under the special section on p. 667.

Clinical Instruction.—THE MANCHESTER ROYAL INFIRMARY.—The New Royal Infirmary has been built on the pavilion system, near the University, between the recently enlarged Eye Hospital and the new St. Mary's Hospital for Women and Children, and has accommodation for 592 beds. Of these 52 are allotted to the Special and Emergency Departments; the 540 remaining beds are allocated as follows: 240 for medical practice and 300 for surgical practice (180 for men and 120 for women and children). The medical side consists of five units, each unit having a testing room for the scientific investigation of morbid products and a class-room. The surgical beds are also arranged in five units, each unit having its own operation theatre, with anæsthetising, recovery, sterilising, testing, and apparatus rooms, and its own class-room attached. Of these units four on each side are already occupied. The fine educational block provides very handsomely for the wants and comforts of the students, there being separate suites of rooms for the men and the women, and also a large common reading room, a lecture theatre, and a museum. The present annual average number of in-patients is 7000, of out- and home-patients 27,000, and the list of casualties in the accident room has averaged 18 000 per annum. About 5000 operations are performed annually in the operation [illegible] vales- [illegible]) the [illegible] th its [illegible] con- [illegible] ment.

Women students are admitted to the practice of the Infirmary *on the same terms as men.*

Fees.—Medical Practice: Three months, 5 guineas; six months, 8 guineas; 12 months, 12 guineas; full period required by the Examining Boards, 25 guineas.

In addition to the list of scholarships given under the general heading, "*The Victoria University of Manchester*," two Entrance Scholarships in Medicine of the value of £100 each are offered annually by the Council of the Manchester University and the Medical Board of the Manchester Royal Infirmary for proficiency in Arts and Science subjects respectively. The Bradley Memorial Scholarship in Clinical Surgery, value £20, is offered annually in the Summer Session. Gentlemen are eligible who are in their fifth or sixth year of study, have com- [illegible] years in clinical [illegible] One Medical and [illegible] of 6 guineas are offered annually. (The other scholarships and prizes are in the College Syllabus.) Annual appointments may be held by those who have attended the practice of the infirmary: a Surgical Registrar (£80); a Pathological Registrar (£100); a Medical Registrar (£70); a Surgical Tutor (£30); a Director and an Assistant Director of the Clinical Laboratory (£200 and £40); an Assistant Medical Officer (£105); Three Assistant Surgical Officers (£35 each); Five Anæsthetists (£50); a Medical Officer for home patients (£150); and a Medical Officer for Radiography and Electricity Department (£100). [illegible] annually: [illegible] gical Offi[illegible] valescent [illegible] Officer at this hospital is appointed every six months at a salary of £80 per annum. The following unpaid appointments are open to those who have attended the practice of the Infirmary:—House Surgeons: Two Senior and Two Junior House Surgeons are appointed every three months for a term of six months. *House Physicians*: Ten House Physicians are appointed during each year for a term of six months. Also every six months officers are appointed to the Accident Room, the Gynæcological, and the Ear and Throat Departments. The House Surgeons and House Physicians and Resident Assistant at Cheadle must possess registrable qualifications. Consulting Physician: Dr. Henry Simpson. Physicians: Dr. Graham Steell, Dr. Judson S. Bury, Dr. A. T. Wilkinson, Dr. E. S. Reynolds, and Dr. G. R. Murray. Assistant Physicians: Dr. R. T. Williamson, Dr. E. M. Brockbank, and Dr. E. N. Cunliffe. Pathologist: Dr. J. Lorrain Smith. Consulting Surgeon: Mr. Walter Whitehead. Surgeons: Mr. F. A. Southam, Mr. G. A. Wright, Mr. W. Thorburn and Mr. J. E. Platt. Assistant Surgeons: Mr. J. W. Smith, Mr. A. H. Burgess, Mr. J. H. Ray, and Mr. E. D. Telford. Anæsthetist: Mr. Alexander Wilson. Consulting Obstetric Physician: Dr. Lloyd Roberts. Gynæcological Surgeon: Dr. A. Donald. Assistant Gynæcological Surgeon: Dr. W. E. Fothergill. [illegible]: [illegible]. A. Hill Griffith. Aural Surgeon: [illegible] ntal Surgeon: Mr. W. A. Hooton. [illegible]: Dr. F. E. Tylecote. Resident Surgical Officer: Mr. H. H. Rayner. Pathological Registrar: Dr. W. B. Anderton. Medical Registrar: Dr. R. Lakin. Surgical Registrar: Dr. Howard Buck. Director of the Clinical Laboratory: Dr. G. E. Loveday. Assistant Director of the Clinical Laboratory: Dr. A. Ramsbottom. Administrators of Anæsthetics: Dr. A. F. Thompson, Dr. S. R. Wilson, Mr. Edward Moir, and Dr. E. Falkner Hill. Assistant Medical Officer: Dr. A. Ramsbottom. Assistant Surgical Officers: Mr. C. Roberts, Mr. P. R. Wrigley, and Mr. W. H. Hey. Medical Officer for Home Patients: Dr. George Ashton. Medical Officer for Radiography and Electricity Department: Mr. A. E. Barclay. General Superintendent and Secretary: Mr. Walter G. Carnt.

MANCHESTER *CHILDREN'S HOSPITAL*, *Pendlebury* and Gartside-street, Manchester.—The hospital contains 168 beds and 26 in the Convalescent Home, St. Anne's-on-Sea. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the new Out-patient Department, Gartside-street, Manchester. Physicians: Dr. Hutton, Dr. Heywood, and Dr. Lapage. Surgeons: Mr. J. Howson Ray, Mr. E. D. Telford, and Mr. C. Roberts. Honorary Consulting Surgeon: Mr. G. A. Wright. Honorary Consulting Pathologist: Professor R. Lorrain Smith. Honorary Surgeon for Throat, Nose, and Ear Diseases: Mr. F. H. Westmacott. Pathologist: Dr. W. Mair. Honorary Dental Surgeon: Mr. Barron J. Rodway. Resident Medical Officers: Mr. Hugh Ashby and Mr. Neilson Wallace. Medical Officers at the Dispensary: Dr. A. H. Norris and Mr. Raymond Bury. During 1908 there were 2248 in-patients and 30,441 new out-patients were under treatment at the Dispensary, and there were 100,910 attendances made by out-patients. Secretary: Mr. H. J. Eason.

THE MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham-hill-road, Manchester.—The hospital contains 70 beds. Out-patients are seen daily from 8.30 to 10 A.M. Honorary Consulting Physicians: Dr. W. N. Maccall and Dr. T. C. Railton. Honorary Consulting Surgeons: Mr. Frederick A. Southam. Honorary Physicians for Women: Dr. Samuel Buckley and Dr. T. Arthur Helme. Honorary Surgeon for Women: Mr. Arnold W. W. Lea. Honorary Physician: Dr. J. J. Cox. Honorary Physicians for Children: Dr. C. H. Melland and Dr. C. C. Heywood. Honorary Assistant Surgeon for Women: Mr. Harold Clifford. Honorary Surgeon for Children: Mr. Philip Roscoe Wrigley. Anæsthetists: Mr. G. A. Barrow and Dr. H. R. Clarke. [illegible] ant Medical Pathologist: Dr. J. [illegible] Officers: Dr. A. W. [illegible]. Honorary Dentist: Mr. W. A [illegible] Mr. Daniel Dougal.

UNIVERSITY OF LEEDS.

Candidates presenting themselves for Matriculation in the Faculty of Medicine must pass an examination in English (Language or Literature) and English History, Mathematics and Latin, and in two of eight optional subjects. Exemption from the matriculation examination is granted to graduates of any university of the United Kingdom provided Latin has formed part of one of the degree examinations.

Four degrees in Medicine and Surgery are conferred—viz.: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), also Degrees and Diplomas in Dental Surgery and a Diploma in Public Health.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of 21 years on the day of graduation, and that they have attended courses of instruction approved by the University extending over not less than *five years,* two of such years, at least, having been passed in the University subsequently to the date of passing the First Examination. Candidates must also satisfy the examiners in the several subjects of the following examinations entitled respectively: the Matriculation Examination, or such other examination as may have been recognised by the Joint Matriculation Board in its stead; the First Examination; the Second Examination; and the Final Examination.

The First Examination.—The First Examination consists of: Part I., Physics and Chemistry; Part II., Biology. Candidates will be allowed to pass the two parts separately.

The Second Examination.—The Second Examination consists of: Part I., Anatomy and Physiology; Part II., Materia Medica and Pharmacy. Candidates will be allowed to pass the two parts separately.

The Final Examination.—The Final Examination consists of; Part I., Pathology and Bacteriology, Forensic Medicine, and Public Health. Part II., Medicine: Systematic and Clinical, including Mental Diseases and Diseases of Children; Surgery: Systematic, Clinical and Practical; Obstetrics and Gynæcology: Systematic, Clinical, and Practical; Pharmacology and Therapeutics. Candidates will be allowed to pass the two parts separately and they may present themselves for examination in Part I. at the end of the tenth term.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine; provided always that original work published in scientific journals or in the Proceedings of learned societies, or separately, shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Every candidate is also required to furnish certificates of attendance in accordance with the regulations of the University. The subjects of examination are as follows: Surgical Anatomy, Surgery, Operative Surgery, Clinical Surgery, Ophthalmology, Pathology, and Bacteriology.

Diploma in Public Health.—The regulations for this diploma will be found on p. 667.

Professors—Physics: W. Bragg, M.A., F.R.S. Chemistry: A. Smithells, B.Sc., F.R.S. Organic Chemistry: J. B Cohen, B.Sc. Zoology: W. Garstang, M.A. Botany: V. F. Blackman, M.A. Anatomy: T. Wardrop Griffith, M.D. Physiology and Histology: De Burgh Birch, M.D. Pathology: A. S. Grünbaum, M.D. Medicine: A. G. Barrs, M.D. Surgery: H. Littlewood, M.Sc., F.R.C.S. Obstetrics: J. B. Hellier, M.D. Public Health: J. S. Cameron, M.D. Therapeutics: H. J. Campbell, M.D. Forensic Medicine: F. W. Eurich, M D.

At the University of Leeds (School of Medicine) there are two Scholarships and six Prizes. The [illegible] value £73 2s. 6d., is awarded on th[illegible] Matriculation Board Examination held in July after a complete course of lectures and practical classes at the Leeds School. The Infirmary Scholarship, value £42, is awarded on the results of the First M.B. Examination of the University of Leeds after a complete course of hospital practice and clinical lectures at Leeds Infirmary. The Hardwick Prize of £10 is awarded after competitive examination in Clinical Medicine among Clinical Clerk Students of two years' standing. The McGill Prize of £10 is awarded after competitive examination among advanced surgical students in Clinical Surgery. Thorp Prizes of £10 and £5 respectively are awarded after examinations in Forensic Medicine and Hygiene, and the Thorp Prize Essay, value £15, is awarded every three years to former students of the Leeds School for an Essay or Research on some subject connected with Forensic Medicine, Toxicology, or Public Health. The Scattergood Prize of £5 is awarded after examination in Midwifery.

Clinical Instruction.—THE LEEDS GENERAL INFIRMARY, in connexion with this medical faculty, has accommodation for 524 in-patients, including 96 beds at "semi-convalescent" homes in the country. During the last year 7137 in-patients and 48,635 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical lectures are given in Medicine and Surgery by the Physicians and Surgeons. *There are Medical, Surgical, Ophthalmic,* Aural, Electro-therapeutic, [illegible] Departments, in each of which [illegible] parted to students. A Gynæco[illegible] Department, in which there were 501 confinements, together with Laryngeal and Skin Clinics, are in operation. Several valuable prizes are given at the end of each session. The following appointments at the Infirmary are annually open to students (for some of them, however, a registered legal qualification is required): Non-resident: clinical pathologist, £200; senior anæsthetist, £50; 5 anæsthetists, £25. Resident: medical officer, £150; surgical officer, £150; casualty officer, £125; ophthalmic, £100; ophthalmic house surgeon, £50. These appointments are made annually and holders are eligible for re-election. Resident medical officer to the Ida Hospital, for six months; honorarium £30. Obstetric officer, for six months; six house physicians, for six months; 7 house surgeons, for six and 12 months; 24 physicians' clerks, for six months; 24 surgeons' dressers, for six months; 16 ophthalmic and aural surgeons' dressers, for three months; 12 gynæcological ward clerks, for three months; 16 gynæcological out-patient clerks, for three months; 24 maternity clerks, for one month; 24 assistant physicians' clerks, for three months; 8 dermatological clerks, for three months; 8 laryngological clerks, for three months; 24 assistant surgeons' dressers, for three months; 8 assistant ophthalmic surgeons' dressers, for three months; 24 dressers in the casualty-room, for three months; 24 post-mortem room clerks, for three months; 8 laboratory assistants, for three months. There are appointments open to students in other medical institutions in the town and also in the West Riding (Lunatic) Asylum.

The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, the Maternity Home, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds students. The buildings of the Medical School are placed close to the Infirmary and contain complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy are some of the most striking features of the buildings. Provision for the convenience of students, in the shape of a common room, a refectory, &c., are made. The classes in Systematic and Practical Chemistry, Physics, Botany, and Zoology are held in the Science and Arts Department of the University, in College-road. Two Entrance Scholarships are offered: one, of the value of £73 2s. 6d., covering admission to all requisite lectures; and the other, of the value of 40 guineas, covering the cost of admission to the medical and surgical practice of the infirmary.

Staff of Leeds General Infirmary.—Consulting *Physicians:*

Sir Thomas Clifford Allbutt, Dr. John Edwin Eddison, and Dr. Charles M. Chadwick. Consulting Surgeons: Mr. Thomas [illegible], and Mr. Edward Ward. [illegible] John Albert Nunneley. [illegible] r. James Braithwaite. [illegible] S. Carter. Physicians: [illegible] orge Barrs, and Dr. T. W[illegible] r. Harry Littlewood, Mr. R. [illegible] Moynihan, and Mr. Walter [illegible] and Ear Department: Mr. [illegible] Whitehead. *Obstetric Physician*: Dr. J. B. Hellier. Physician with Charge of Out-patients: Dr. E. F. Trevelyan. Assistant Physician: Dr. W. H. Maxwell Telling. Assistant Surgeons: Mr. J. Faulkner Dobson and Mr. H. Collinson. Assistant Surgeon to the Eye and Ear Department: Mr. G. Constable Hayes. Pathologist: Dr. Albert S. Grunbaum. Assistant Surgeon in Charge of the Ida and Robert Arthington Semi-Convalescent Hospitals: Mr. L. R. Braithwaite. Dental Surgeon: Mr. J. B. Hordern. Medical Officer in Charge of the Electro-Therapeutic Department: Dr. L. A. Rowden. Clinical Pathologist: Dr. O. C. Gruner. Medical Registrar: Dr. George W. Watson. Surgical Registrar: Mr. J. A. Coupland. Anæsthetists: Dr. Douglas Seaton, Mr. J. Nicholson, Dr. T. P. Rowling, Dr. G. E. St. Clair Stockwell, Dr. G. Huntley Legge, and Dr. Frank Dobson.

UNIVERSITY OF SHEFFIELD.

Candidates for a medical degree shall have matriculated in the [illegible] be [illegible] sanctioned by the Joint Matriculation Board. The subjects required by the General Medical Council must be included in the Matriculation Examination or its recognised substitute.

The Degrees in the Faculty of Medicine are Bachelor [illegible] B.), Doctor [illegible] I.).

[illegible] *Surgery.*—A candidate for the degrees of M.B., Ch.B., shall produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the First Examination.

The First Examination.—The subjects of examination are chemistry, physics, and biology. The examination is divided into two parts, A (chemistry and physics) and B (biology), and candidates may pass in each part separately. The Intermediate B.Sc. Examination in these subjects will, on payment of the required additional fee, be accepted instead of this examination. Candidates must, after matriculation and registration as a medical student, have attended courses of instruction (lectures and laboratory work) in chemistry, physics, and biology, for one year each.

A Special Exam[illegible] held at the end of t[illegible] after completion of [illegible]

The Second Examination.—The subjects of examination are anatomy, physiology, materia medica, and pharmacy. The examination is divided into two parts, A (anatomy and physiology) and B (materia medica and pharmacy), and candidates may pass in either part separately. Candidates must have completed the third winter session of professional study, must have passed the first examination, and must have attended (1) lectures on anatomy and dissections during two winter sessions and one summer session; (2) lectures on physiology during [illegible] practical physiology [illegible] during one summer [illegible] pharmacy for three months.

The Third or Final Examination.—The subjects of [illegible] surgery, obstetrics, and gynæcology). Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination or for Part B must have completed the fifth year of study.

Degree of Doctor of Medicine.—Candidates for the degree [illegible] e examination for [illegible] r previously; must [illegible] in some subject approved by the professor of medicine, and must pass an examination in the Principles and Practice of Medicine.

Degree of Master of Surgery.—Candidates for the degree of Ch.M. must have passed the examination for the degrees of *M.B., Ch.B. at least* one year previously and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital *or other* public institution, affording full opportunity for the study of Practical Surgery.

The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology.

Professors—Physics: W. M. Hicks, Sc.D., F.R.S. Chemistry: W. Palmer Wynne, D.Sc., F.R.S. Biology: Alfred Denny, M.Sc., F.L.S. Anatomy: C. J. Patten, M.A., M.D., D.Sc. Physiology: J. S. Macdonald, B.A., L.R.C.S., L.R.C.P. Medicine: D. Burgess, M.A., M.B., F.R.C.P. Materia Medica, &c.: W. T. Cocking, M.D. Surgery: R. J. Pye-Smith, Ch.M., F.R.C.S. Pathology: J. M. Beattie, M.A., M.D. Midwifery: R. Favell, Ch.M., M.R.C.S. Public Health: Ralph P. Williams, M.D., B.S., D.P.H.

At this University there are 12 scholarships and a Town Trust Fellowship. The Entrance Scholarship, value £116, is awarded after examination, but the candidate must read for a *Degree in Medicine*. There are three Special (1909) Scholarships, one of them for women only. All three are awarded on the results of the Joint Board Matriculation Examination and the candidates must read for a Degree in Medicine of the University of Sheffield. That for women is of the value of £100, and those for men are of the values of 150 guineas and 50 guineas respectively. There are five Town Trust scholarships, obtainable by a special examination. Two are for boys, one is for girls, and two are for boys or girls. The candidates must have been educated *in* Sheffield. *The two latter are of* the value of £60 per annum and the three former are of £50 each per annum. The Kaye Scholarship in Anatomy and Physiology, of £22 10*s*. for one year, is awarded after special examination of students who have completed the second Winter Session. [illegible] The Mechanics' I[illegible] one year (renewa[illegible] ship. The Frede[illegible] Scholarship of £50 per annum for two years is available [illegible] residing within 40 miles. [illegible] tion for these two latter. [illegible] Fellowship, value £75 per annum for one year, open to graduates of the University. Full particulars as to curriculum, scholarships, &c., may be had on application to the Registrar or to the Dean of the Medical Faculty.

Public Health.—The regulations with regard to the degrees in Sanitary Science will be found on p. 667.

The Medical School.—The new buildings of the University opened in 1905 are situated at the west end of the city, adjoining Wes[illegible] the entire nort[illegible] various athleti[illegible] management o[illegible] annually. There are large and comfortable common rooms both for men and women students. A refectory is open daily at the University where students may obtain refreshments, lunch, dinner, &c., at extremely moderate prices. The University journal *Floreamus*, edited by a committee of staff and students, is published each term. The University Hostel, Ashgate-road, is recognised by the Senate as a residence for women students, full particulars of which may be obtained of the Lady Tutor. Other societies of interest to [illegible] Chemical, and Clinical [illegible] ity is within easy reach [illegible] h it is connected for [illegible] ows: The Royal Infirmary, containing 255 beds, with an annual average number of over 3800 in-patients, over 8000 out-patients, and over 21,000 c[illegible] with 172 beds, and an annual [illegible] over 9000 out-patients, and ove[illegible] e Jessop Hospital for Disease[illegible] nearly 500 in-patients, and over 2000 out-patients; also a Maternity department, with over 250 in-patients per annum and over 700 out-patient cases attended. Special courses on Fevers are held at the City Fever Hospitals (547 beds) and on Mental Diseases at the South Yorkshire Asylum (1610 beds). For purposes of clinical practice the practices of the Royal Infirmary and Royal Hospital are amalgamated, giving a total of 427 beds for the treatment of medical, surgical, and special cases. There are special departments for the treatment of Diseases of the Eye at such institution, with wards assigned to them. *In addition to these the Royal Infirmary has special departments* for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for Diseases of the Throat, Ear, Skin, Orthopædics, and Mental Diseases. During the last year over 6000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 47,000. The medical and surgical staffs attend daily and give clinical instruction in the wards and out-patient rooms at stated times. Clinical lectures in Medicine and Surgery are given weekly at stated times. Instruction in the practical administration of anæsthetics is given at either institution by the Anæsthetists. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—which are in the University buildings are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work and the facilities for practical study in these subjects are second to none. The department of Pathology and Bacteriology in the University is replete with every requirement for the most advanced work in these subjects. There is a large Pathological Museum in the department open daily to students. The post-mortem rooms of the Royal Infirmary and Royal Hospital are under the charge of the Professor of Pathology and afford ample material for demonstrations. In connexion with the University there is a *complete dental department, fully* recognised by the various examining bodies, at the Sheffield Royal Hospital. A list of the various Scholarships and Fellowships will be found in another column.

Students who have passed their examination in anatomy and physiology can hold the usual dresserships and clerkships, the appointments being for a period of three months except in the case of casualty dresserships, which last two months. All students beginning hospital practice in Sheffield will be required to hold the post of casualty dresser before being eligible for any other of the above appointments. In addition to the laboratories above mentioned the Medical department of the University contains lecture rooms for the various subjects of the curriculum, a complete materia medica museum, and the large library and reading-room of the Medico-Chirurgical Society which is open daily to students for purposes of study.

Fees.—Composition fee of £80, payable in three instalments—viz., £24 at commencement of first year of study, £28 at commencement of *second year of* study, and £28 at commencement of third *year of* study. A composition fee of £80 entitles the student to attendance on all the courses of lectures and practical classes except pharmacy, vaccination, and instruction in anæsthetics required for a degree course in the University or for the ordinary qualifications in medicine and surgery of the Examining Boards. The composition fee does not include medical and surgical hospital practice, clinical lectures, practical instruction in mental diseases, diseases of women, and infectious diseases, the fee for the full period of both medical and surgical hospital practice required by the Examining Boards being £42 if paid in one sum at commencement of hospital practice; or £43 1*s*. if paid in two sums of 21 guineas and 20 guineas, one on beginning hospital practice, the other twelve months later.

Staff of the Royal Infirmary, Sheffield.—Physicians: Dr. W. Dyson, B.A., Dr. W. S. Porter, and Dr. W. Tusting Cocking. Surgeons: Mr. Sinclair White, Mr. Arthur *Connell, and Mr. Archibald Cuff. Medical Officer to the* Skin Department: Dr. W. Tusting Cocking. Pathologist: Professor J. M. Beattie. Medical Officer to the Ear and Throat Department: Mr. W. S. Kerr. Ophthalmic Surgeon: Mr. G. H. Pooley. Medical Officer in Charge of Electrical Department: Dr. A. Rupert Hallam. Anæsthetists: Mr. H. T. Wightman, Mr. J. Wilfred Stokes, and Dr. A. Rupert Hallam. Honorary Secretary to the Medical Staff: Mr. Arthur Connell.

Staff of the Sheffield Royal Hospital.—Physicians: Dr. Duncan Burgess and Dr. Arthur Hall. Surgeons: Mr. H. Lockwood and Mr. Graham Simpson. Ophthalmic Surgeon: Dr. S. Riseley. Aural Surgeon: Dr. George Wilkinson. Physician for Mental Diseases: Mr. G. E. Mould. Assistant Surgeons: Mr. A. Garrick Wilson and Mr. F. A. Hadley. Assistant Physicians for Out-patients: Dr. A. E. Naish and Dr. Herbert Henry. Anæsthetists: Mr. H. Hallam, Mr. N. Milner, and Dr. C. G. Murray. Medical Officer to the Electrical and X Ray Department: Dr. W. H. Nutt. Pathologist: Professor J. M. Beattie. Honorary Secretary to the Medical and Surgical Staff: Dr. S. Riseley. Dental Surgeons: Mr. F. G. Mordaunt, Mr. F. Harrison, Mr. D. Dathl Davies, Mr. H. J. Morris, and Mr. C. C. Drabble. Assistant Dental Surgeons: Mr. P. Southwell Stokes, Mr. W. J. Law, and Mr. H. J. Stoner.

There are other institutions at which the students of the University of Sheffield can receive clinical instruction. These are the City Fever Hospitals (Medical Superintendent, Dr. Egerton H. Williams), the South Yorkshire Asylum (Medical Superintendent, Dr. W. S. Kay), and the Jessop Hospital for Women, Gell-street, Sheffield. The hospital contains 54 beds for gynæcological cases and 18 for obstetric cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. A 12 weeks' course of instruction (theoretical and practical) is also provided for resident pupil midwives, the institution being approved by the Central Midwives Board as a training centre. Medical Officers: Mr. Richard Favell, Dr. J. W. Martin, and Mr. Percival E. Barber. Assistant Medical Officer: Mr. M. H. Phillips. Honorary Secretary to the Staff: Mr. Percival E. Barber.

UNIVERSITY OF BRISTOL.

FACULTY OF MEDICINE.—The University of Bristol is the most recent of the English Universities, having been incorporated by Royal Charter during the present year to replace University College, Bristol. The regulations for the medical curriculum are still under consideration by the Senate, but we understand that they will be published before the opening of the winter session.

Courses of Lectures.—Medicine: Professor F. H. Edgeworth and Professor J. Michell Clarke. Surgery: Professor C. A. Morton and Professor James Swain. Anatomy: Professor Edward Fawcett. Practical Anatomy: Demonstrators, Mr. E. W. Hey Groves, Mr. W. S. Vernon Stock, Mr. C. B. Goulden, and Mr. W. H. A. Elliott. Physiology and Histology: Professor A. F. Stanley Kent. Demonstrator: (vacant). Chemistry: Professor Francis Francis. Public Health: Dr. D. S. Davies. Midwifery: Professor W. C. Swayne. Medical Jurisprudence: Dr. R. Eager and Dr. G. Parker. Pathology and Morbid Anatomy: Professor I. Walker Hall. Demonstrator: Dr. Emrys-Roberts. Operative Surgery: Mr. J. Paul Bush. *Practical* Medicine: Professor Edgeworth and Professor Michell Clarke. Practical Surgery: Dr. R. G. Poole Lansdown. Practical Midwifery: Mr. D. C. Rayner. Materia Medica and Practical Pharmacy: Mr. O. C. M. Davis. Pharmacology and T[illegible] Dr. Newman Neild. Biology: Professor S. H. [illegible] Chemistry: Professor Francis Francis. Practical Bacteriology: Professor I. Walker Hall. Comparative Anatomy: Professor C. Lloyd Morgan. Dental Anatomy and Physiology and Dental Histology: Mr. E. A. G. Dowling. Demonstrator: Mr. F. W. Perry, L.D.S. Dental Bacteriology: Professor I. Walker Hall. Dental Surgery and Practical Dental Surgery: Mr. W. R. Ackland. Dental Mechanics and Dental [illegible] tical Dental Metallurgy: Dr. C. A. [illegible] fee for lectures and hospital practice, 133 guineas. Composition fee for Dental lectures and surgical practice, 75 guineas; for two years' instruction in Mechanical Dentistry, 75 guineas; if whole curriculum be taken the composition fee is 140 guineas. Special six *months' course for Diploma* in Public Health. 1. Lectures on Public Health: Dr. D. S. Davies. 2. Bacteriology: Professor I. Walker Hall. 3. Laboratory Course of Hygienic Chemistry: Mr. F. W. Stoddart. 4. Demonstrations on the Various Acts, Orders, By-laws, &c.: Mr. J. C. Heaven. 5. Practical Outdoor Sanitary Work: Dr. D. S. Davies. Fee for the entire course 25 guineas. Full information can *be obtained* on application to the Dean, Professor Edward Fawcett, University College, Bristol.

Professors—Chemistry: F. Francis, D.Sc. Experimental Physics: A. P. Chattock. Zoology: S. H. Reynolds, M.A. Psychology: C. Lloyd Morgan, LL.D., F.R.S. Medicine: F. H. Edgeworth, M.D., and J. Michell Clarke, M.D. Surgery: C. A. Morton, F.R.C.S., and J. Swain, F.R.C.S. Anatomy: E. Fawcett, M.D. Physiology and Histology: A. F. Stanley Kent, M.A. Midwifery: W. C. Swayne, M.D. Pathology: I. Walker Hall.

Scholarships and Prizes.—At the University College, Bristol, there are a scholarship, three prizes, and a gold and a silver medal. The Medical Entrance Scholarship of £75 is awarded after competitive examination in subjects of general education. The Tibbits Surgical Prize of £9 9*s.* is awarded for proficiency in Practical Surgery. The Martyn Memorial Pathological Prizes of £10 each, of which there are two annually, are awarded after competitive examination in Pathology and Morbid Anatomy. A gold medal and a silver medal are given by the committees of the two institutions to the most distinguished students of the fifth year. These prizes and medals can be competed for by perpetual students of the Faculty of Medicine, University College, Bristol.

At the Bristol Royal Infirmary there are five prizes, which are restricted to perpetual students who have done the necessary qualifying work at the Infirmary. They are the Suple Medical Prize and the Suple Surgical Prize, each consisting of a gold medal of the value of 5 guineas and 7 guineas in money. The one is awarded after competitive examination in Medicine of students of the fourth and fifth years and the other after competitive examination in Surgery of students of the third and fourth years. The Henry Clark Prize, value 11 guineas, is awarded for the class work of third-year students. The Crosby Leonard Prize, value 7 guineas, is awarded after examination in Clinical Surgery, and the Augustin Prichard Prize, value 6 guineas, is awarded after examination in Surgical Anatomy.

At the Bristol General Hospital there are two scholarships and a prize, which are restricted to perpetual students who have done the necessary qualifying work at the Hospital. The Sanders Scholarship, value £22 10*s*, is awarded after competitive examination in Medicine, Surgery, and Midwifery of fourth-year students. The Clarke Scholarship of £15 is awarded after competitive examination in surgery among students of the fourth year. The Marshall Prize, value £12, is awarded to the best surgical dresser of the fourth year.

Clinical Instruction.—Students of the Faculty of Medicine are admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all students, men and women alike. The Infirmary and the Hospital comprise between them a total of 470 beds; and both have very extensive out-patient departments, special departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large outdoor Maternity Departments and Dental Departments. Students may also attend the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is 614. Very exceptional facilities are thus offered to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

THE ROYAL INFIRMARY, BRISTOL, has 270 beds, the number of in-patients is 3869, and the number of out-patients 49,998 annually. There are separate wards for diseases of children, eye cases, diseases of women, and diseases of throat and nose. The Pathological and Bacteriological Departments are under the direction of the pathologist. In clinical pathology a special room is set apart for the exclusive use of students and research workers, and post-graduate courses may be taken over by arrangement with the pathologist. In the Pharmaceutical Department special classes are held by the pharmacist. *Clinical appointments.* All students must undergo before holding Clinical appointments preliminary instruction for three months in pathological, medical, surgical, and dental methods of diagnosis, &c. Pathological Clerkship for three months. Surgical Dresser for six months: the dressers reside in the Infirmary free of expense in rotation a week at a time, taking a part in the whole daily routine of surgical work. Medical Clerk for six months; Obstetric Clerk for three months; Ophthalmic Clerk for three months. In other special departments attendance is made during the fifth year of study. A convenient students' room is provided. Resident appointments: The posts of House Surgeon, House Physician, Obstetric and Ophthalmic House Surgeon, Throat, Nose, and Ear House Surgeon, second House Surgeon, and Casualty Officer are all salaried. The senior post is usually held for two or more years, other posts held for 12 months, and the Casualty Officer's post tenable for six months. Honorary and Consulting Physicians: Dr. W. H. Spencer, Dr. R. Shingleton Smith, Dr. H. Waldo, and Dr. J. E. Shaw. Honorary and Consulting Surgeons: Mr. E. C. Board, Mr. W. H. Harsant, Mr. A. W. Prichard, and Mr. Munro Smith. Honorary and Consulting Ophthalmic Surgeon: Mr. F. Richardson Cross. Honorary Physicians: Dr. A. B. Prowse and Dr. F. H. Edgeworth. Honorary Surgeons: Mr. J. Paul Bush, Mr. H. F. Mole, Dr. J. Swain, and Mr. T. Carwardine. Honorary Ophthalmic Surgeon: Dr. Ogilvy. Honorary Obstetric Physician: Dr. Walter Swayne. Honorary Dental Surgeon: Mr. W. R. Ackland. Honorary Physician to the Throat and Nose Department: Dr. P. Watson Williams. Honorary Assistant Dental Surgeon: Dr. Charles A. Hayman. Honorary Assistant Physicians: Dr. J. R. Charles and Dr. J. A. Nixon. Honorary Assistant Surgeons: Mr. C. F. Walters and Mr. E. H. E. Stack. Pathologist: Dr. I. Walker Hall. Honorary Demonstrator of Morbid Anatomy: Dr. J. J. S. Lucas. Honorary Anæsthetist: Mr. A. L. Fleming. Honorary Assistant Anæsthetist: Mr. S. V. Stock. Honorary Skiagraphist: Mr. James Taylor. House Surgeon and Senior Resident Medical Officer: Mr. Hubert Chitty.

BRISTOL GENERAL HOSPITAL.—Number of beds 200; number of in-patients over 2000; number of out-patients about 40,000 annually. The arrangements are practically similar to those at the Royal Infirmary. Honorary and Consulting Physician: Dr. A. J. Harrison. Honorary and Consulting Physician to Throat and Nose Department: Dr. Barclay J. Baron. Honorary and Consulting Surgeons: Mr. Robert W. Coe, Dr. George F. Atchley, Mr. Nelson C. Dobson, Mr. F. Poole Lansdown, and Mr. Chas. F. Pickering. Physicians: Dr. J. Michell Clarke, Dr. George Parker, and Dr. J. O. Symes. Surgeons: Mr. C. A. Morton, Dr. R. G. Poole Lansdown, Dr. J. Lacy Firth, and Dr. H. Greville Kyle. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to Department for Diseases of the Skin: Dr. W. Kenneth Wills. Surgeon to the Throat and Nose: Dr. J. Lacy Firth. Ophthalmic Surgeon: Mr. Cyril H. Walker. Assistant Physicians: Dr. Newman Neild and Dr. Carey F. Coombs. Assistant Surgeon: Mr. E. W. H. Groves. Assistant Physician Accoucheur: Mr. D. C. Rayner. Anæsthetists: Dr. J. Freeman and Dr. Hedley Hill. Dental Surgeon: Mr. E. A. G. Dowling. Pathologist: Dr. Emrys-Roberts. Curator of Museum: Dr. W. J. H. Pinniger. Skiagraphist: Mr. J. Ellington Jones.

Resident Appointments.—There are five resident appointments in the Hospital, and the Dressers reside in rotation, free of expense. The Maternity students also have rooms provided in the institutions.

Fees.—Medical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Surgical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Medical and Surgical Practice together in one payment: six months, 12 guineas; one year, 20 guineas; perpetual, 35 guineas. Dental Surgical Practice: one year, 7 guineas; perpetual, 12 guineas. The above fees include Clinical Lectures. Clinical Clerkship: 5 guineas for six months. Dressership: 5 guineas for six months. Museum fee: [illegible] entrance), or 1 guinea annually. [illegible] Students from other schools or [illegible] hing to attend Clinical Practice for short periods and not requiring certificates for such attendance may do so for the following fees:—Medical and Surgical Practice conjointly: one month, 2 guineas; two months, 3 guineas; three months, 4 guineas; and six months, 7 guineas.

Further information may be obtained on application to the Dean of the Faculty.

UNIVERSITY OF WALES.

This University has now the privilege of [illegible] in Medicine and Diplomas in Public Health. At the three constituent Colleges of Aberystwyth, Bangor, and Cardiff, there are Professors of Chemistry, Botany, Zoology, and Physics, so that the students of the University can obtain proper instruction in the ancillary subjects. The foundation of a Medical Faculty has been laid at University College, Cardiff, where there is a recognised school of medicine.

University College, Cardiff: School of Medicine.—All classes are open to both men and women students who may spend three out of their five years of medical study at Cardiff. The courses of study are recognised as qualifying for the Preliminary Scientific and Intermediate Examination in Medicine in the University of London and for the corresponding examinations in the other Universities. Students who are preparing for these examinations may compound for their courses by paying a fee of £57 10*s*., while a composition fee of £41 10*s*. includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board. In all cases the composition fees may be paid by instalments. Hospital instruction is given at the Cardiff Infirmary. The attention of students about to matriculate is drawn to the numerous entrance scholarships and exhibitions, varying in value from £10 to £30 per annum, offered for competition at University College, Cardiff, in September next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registrar. In the department of Public Health established in 1899 instruction is given qualifying for the D.P.H. examinations. Further information may be obtained from the Dean of the Faculty of Medicine.

Lecturers.—Physics: Professor A. L. Selby. Chemistry: Professor C. M. Thompson. Zoology: Professor W. N. Parker. Botany: Professor A. H. Trow. Anatomy: Professor David Hepburn. Physiology: Professor J. B. Haycraft. Materia Medica and Therapeutics: Dr. W. Mitchell Stevens. Bacteriology: Mr. H. A. Schölberg. Hygienic Chemistry: Mr. Sugden. Public Health and Hygiene: Dr. E. Walford and Dr. W. Williams. Midwifery (for Midwives): Dr. E. J. Maclean.

Clinical Instruction.—Students can attend the practice of the Cardiff Infirmary, which contains 190 beds.

Cardiff Infirmary.—Founded 1837. 194 beds. Consulting Physicians: Dr. W. T. Edwards, Dr. W. Taylor, and Dr. C. T. Vachell. Consulting Surgeon: Dr. T. Wallace. Consulting Ophthalmic Surgeon: Mr. J. T. Thompson. Consulting Dental Surgeon: Mr. John C. Oliver. Physicians: Dr. H. R. Vachell and Dr A. E. Taylor. Surgeons: Mr. P. Rhys Griffiths, Mr. William Sheen, and Mr. J. Lynn Thomas. Assistant Physicians: Dr. W. Mitchell Stevens, Dr. Cyril Lewis, and Dr. Alfred Howell. Assistant Surgeons: Mr. H. G. Cook, Mr. Cornelius A. Griffiths, and Mr. William Martin. Ear, Throat, and Nose Surgeon: Dr. D. R. Paterson. Ophthalmic Surgeons: Mr. H. C. Ensor and Mr. F P. S. Cresswell. Gynæcologists: Dr. Ewen J. Maclean and Dr. E. Tenison [illegible] Dr. H. A. Schölberg. Sanitary Advis[illegible] Anæsthetists: Dr. Fredk. W. S. Davies, Dr. W. G. Williams, and Dr. Alex. Brownlee. Dental Surgeons: Mr. W. Kittow and Mr. Thomas Quinlan. Medical Officer: Dr. Owen L. Rhys. Resident Medical Officer: Dr. John Wallace. In-patients, 2245; out-patients, 16,323.

Swansea General and Eye Hospital and Swansea Hospital Convalescent Home.—Hospital established 1817, Home 1903. Hospital 141, Convalescent Home built for 20 beds and one cot. Consulting Physicians: Dr. D. A Davies, Mr. John A. Rawlings, Dr. F. Knight, and Mr. J. S. H. Roberts. Consulting Surgeons: Mr. J. Thomas and Mr. H. A. Latimer. Physicians: Dr. E. Le C. Lancaster and Dr. D. E. Evans. Surgeons: Mr. W. F. Brook and Mr. R. O. Elsworth. Obstetric Physician: Mr. R. N. Jones. Ophthalmic Surgeon: Dr. Frank G. Thomas. Surgeon to the Throat, Nose, and Ear Department: Dr. A. F. Blagdon-Richards. Assistant Physicians: Dr. A. W. Cameron and Dr. C. L. Isaac. Assistant Surgeons: Dr. A. F. Blagdon-Richards and Mr. E. Reid. Medical Officers for Outdoor Patients: Mr. E. Reid, Dr. A. W. Cameron, and Dr. C. L. Isaac. Surgeon-Dentist: Mr. H. J. Thomas. Honorary Pathologist and Electro-Therapeutic Officer: Mr. D. R. Edwards. Anæsthetist: Dr. W. L. Griffiths. Secretary-Superintendent: W. D. Hughes. In-patients, 1751; out-[illegible] Home, 91.

ENGLISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Under this heading we give the regulations for the examinations enforced by the Conjoint Examining Board of the Royal Colleges of Physicians of London and Surgeons of England and of the Society of Apothecaries upon students desiring their respective diplomas of qualification. We do not give any list of schools recognised by these bodies as eligible to prepare students for their examinations beyond mentioning that all the schools which we have already described (under the heading of the Universities to which they are attached) are recognised as suitable places of instruction by the corporations granting medical diplomas. The courses of study at the principal colonial medical schools are also recognised as qualifying for the examinations of these corporations.

Any candidate who desires to obtain both the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of *professional study* at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. Six months of the curriculum may be spent in an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.

Professional Examinations.—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Victoria Embankment, W.C., 14 clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the *First Examination* are—Chemistry, Physics, Elementary Biology, and Practical Pharmacy. A candidate may take this examination in three parts at different times (Chemistry and Physics must be taken together until the required standard is reached in both or in one of these subjects, but a candidate will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other). A candidate will be admitted to examination in Chemistry and Physics, in Practical Pharmacy, and Elementary Biology on producing evidence of having passed the required Preliminary Examination and of having received instruction in these subjects at a recognised institution, but he may take Pharmacy at any time during the curriculum. Certificates must be produced of 180 hours' instruction and laboratory work in chemistry; 120 hours' instruction and laboratory work in physics; and 120 hours' instruction and laboratory work in biology. These courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. Synopses of the subjects of examination may be obtained on application. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry, Physics, or Biology he must produce evidence of further instruction at a recognised Institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the *First Examination* are as follows: For the whole examination, £10 10*s.*; for re- [illegible] Parts I. and II., £3 3*s.*; and [illegible] other parts, £2 2*s.*

[illegible] *Examination* are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination on production of the required certificates of professional study. The study of Anatomy and Physiology before passing in two of first three parts of the First Professional Examination is not recognised.

A candidate referred on the *Second Examination* will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the *Second Examination* are: £10 10*s.* for the whole examination and £6 6*s.* for re-examination after rejection.

The subjects of the *Third* or *Final Examination* are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a Medical School and Hospital, not less than one year after passing the Second Examination, on production of the required certificates. Candidates may present themselves for examination in Medicine and Surgery at the completion of the five years' curriculum, not less than two years from the date of passing the Second Examination, on production of the required certificates. Candidates may take this examination in three parts at different times, or they may present themselves for the whole examination at one time. They will be required to produce the following evidence before being admitted to the several parts of the *Third* or *Final Examination*—viz., in Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology, and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Instruction in the Administration of Anæsthetics; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum; in Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser; Instruction in the Administration of Anæsthetics; and Clinical Instruction in Ophthalmology; in Midwifery of having attended Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; and of attendance on 20 Labours.

The fees for admission to the *Third* or *Final Examination* are as follows: For the whole examination, £21. Part I. [illegible] Anatomy, [illegible] Public [illegible] Pharmacy [illegible] re-exami- [illegible] Anatomy, [illegible] II. For re- [illegible] Women, [illegible] £3 3*s.*

A candidate referred on the *Third* or *Final Examination* will not be admitted to re-examination until after the lapse of a period of not less than three months from the [illegible] before bei[illegible] Practice, or the Medical [illegible] case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

Students of recognised universities in England, Scotland, and Ireland, who have passed examinations for a degree in Medicine at their universities in the subjects of the First and Second Examinations of the Examining Board, may enter for the Final Examination at the expiration of two years from the date of passing in Anatomy and Physiology, on production of the required certificates.

Graduates in Medicine of certain recognised Indian, Colonial, and Foreign universities may present themselves for the Final examination under special conditions which can be ascertained on application to the Secretary.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the English Conjoint Board, the Royal College of Physicians of London and the Royal College of Surgeons of England grant honour diplomas, which no longer give the right to practise professionally if held separately. The Royal College of Physicians of London has two such diplomas, the *Fellowship* which is a purely honorary distinction and the *Membership* which is obtained by examination.

Membership.—Every candidate for the Membership of the College must furnish proof of having attained the age of 25 years. Candidates must not be engaged in trade, dispense medicine, make any engagement with a chemist, or any other person for the supply of medicine, or practise medicine or surgery in partnership, by deed or otherwise. Any candidate being already registered or having passed a qualifying examination in accordance with the Medical Act of 1886, who has obtained the degree of Doctor or Bachelor of Medicine at a University in the United [illegible] to be unde[illegible] een adjudged by the Ce[illegible] the Censors think fit) [illegible] The nature and exten[illegible] case of each candidate, be determined by the Censors' Board. All other [illegible] of medicine and may be modified in circumstances to be ascertained by application to the Registrar. For example, candidates under 40 years of age are examined in an ancient or modern language, a test from which their seniors are exempt. The fee for admission as a Member of the College is 40 guineas, except when the candidate for Membership is a Licentiate of the College, in which case the fee already paid for the Licence shall be deducted from the 40 guineas. The fee for the examination is £6 6*s.*

Fellowship.—The *Fellows* are selected annually from the ranks of the *Members.*

ROYAL COLLEGE OF SURGEONS OF ENGLAND: THE FELLOWSHIP.

The Royal College of Surgeons of England confers its diploma of Fellow upon a few distinguished persons in an honorary capacity. Two Members of long standing may also be elected to the Fellowship annually. But the bulk of the Fellows obtain the diploma as the result of examination.

Fellowship.—The examination for the Fellowship is divided into two parts—viz., the First Examination and the Second Examination. The subjects of the First Examination are Anatomy and Physiology and the questions on these subjects may require an elementary acquaintance with Comparative Anatomy and Physiology. The examination is partly written and partly *vivâ voce.* The subjects of the Second Examination are Surgery, including

Surgical Anatomy and Pathology. The examination is partly written and partly *vivâ voce* and includes the examination of patients and the performance of operations on the dead body. The examinations are held during the months of May and November of each year.

The fees for examination are:—First Examination, each admission, five guineas. Second Examination, each admission, 12 guineas. Of such examination fees 17 guineas will be reckoned as part of the fee payable upon admission to the Fellowship. The fee to be paid upon admission to the Fellowship is 30 guineas, except when the candidate is a Member of the College, in which case the fee is 20 guineas.

A Member of the College is admissible to the First Examination at any time after receiving his Diploma of Membership. A candidate who is not a member of the College is admissible to the first Professional Examination for the Fellowship on the production of evidence of having passed the First and Second Examinations of the Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England (or, if a member of a University recognised by the College for the purpose, of having passed the Examinations in his University equivalent to the First and Second Examinations of the Board) and on the production of certificates of attendance upon certain courses of study described in the Regulations.

A Member of the College is admissible to the Second Examination at any time after having passed the First Examination, on producing satisfactory evidence of having been engaged not less than six years in the study (or study and practice) of the profession.

A candidate who is not a Member of the College must possess the registrable surgical and medical degrees recognised by the Council and must have been engaged in the study (or study and practice) of the profession for not less than four years subsequent to the date of obtaining the recognised qualification, one year of which shall have been spent in attendance on the Surgical Practice of a recognised hospital. The diploma of Fellow is not conferred upon successful candidates until they have attained the age of 25 years.

The Regulations may be obtained on application to the Secretary of the Examining Board, Examination Hall, Victoria Embankment, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

There are two examinations—Primary and Final. The Final examination is divided into Section I. and Section II. The Primary examination is held quarterly. Final examinations are held monthly. No examinations are held in the month of September.

The Primary examination consists of two parts. Part I. Elementary Biology; Chemistry, Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Materia Medica and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances. Part II. includes the Principles and Practice of Medicine, Pharmacology, Pathology, and Morbid Histology; Forensic Medicine, Hygiene, Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Section I. of the Final examination cannot be passed before the expiration of 45 months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final examination consists of two Parts. Part I. Clinical Surgery; Part II. Clinical Medicine and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

The course of study for the *Primary examination* is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, 12 months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School recognised by the Society. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary.

The course of study for the *Final examination, Section I.*, includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of one winter and one summer session; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership, six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship, six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on 20 Midwifery cases. The course of medical study must extend over the above-mentioned period of 45 months and the offices of dresser or clinical clerk must be held at a hospital, or other institution recognised by the Society.

The course of study for the *Final examination, Section II.*, includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of 12 months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. No candidate is eligible for the Final examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final examination the candidate must produce certificates: (1) of being 21 years of age; (2) of moral character; (3) of the course of medical study; (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board; and (5) of instruction in the administration of anæsthetics. Candidates intending to present themselves for examination are required to give 14 days' notice. A form for this purpose will be sent on application.

Licentiates are eligible for the Membership of the Society of Apothecaries. Particulars may be obtained on application to the clerk.

The fee for the Licence is 20 guineas. The examination offices are open from 10 A.M. to 4 P.M.; on Saturdays from 10 A.M. to 1 P.M. All letters should be addressed to the Secretary, Court of Examiners, Society of Apothecaries of London, Blackfriars, E.C.

METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

THE institutions which follow provide to the medical student and medical graduate facilities for different forms of instruction and clinical observation. In each case further information can be obtained from the secretary of the hospital.

THE SEAMEN'S HOSPITAL SOCIETY possesses two hospitals —the *Dreadnought* Hospital at Greenwich, 250 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock-road and the other at Gravesend—from which the patients are transferred to the hospitals. The London School of Clinical Medicine is attached to the *Dreadnought* Hospital and the medical staff is as follows:—Physicians: Sir Dyce Duckworth, Bart., Dr. F. Taylor, Dr. J. Rose Bradford, Dr. Guthrie Rankin, and Dr. S. Russell Wells. Surgeons: Sir William Bennett, K.C.V.O., Mr. W. Turner, Mr. A. Carless, and Mr. L. H. McGavin. Ophthalmic Surgeon: Mr. L. V. Cargill. Surgeon for Diseases of the Skin: Sir Malcolm Morris, K.C.V.O. Surgeon for Diseases of the Throat, Nose, and Ear: Mr. Richard Lake. Physician in charge of the Electrical Department: Dr. M. D. Sale Barker. Assistant Physicians: Dr. Thomas Lewis, Dr. Carmalt Jones, and Dr. Fredk. Langmead. Assistant Surgeons: Mr. E. Rock Carling and Mr. C. C. Choyce. Assistant Physician for Diseases of the Skin: Dr. Wilfrid Fox. Assistant Ophthalmic Surgeon: Dr. R. Bickerton. Assistant Surgeon for Diseases of the Throat, Nose, and Ear: Mr. G. N. Biggs. Anæsthetists: Dr. M. Horne, Dr. C. Hughes, Dr. V. B. Orr, and Dr. R. E. Delbruck. Dean: Mr. C. C. Choyce. Medical Superintendent: Dr. M. Mackinnon. The London School of Tropical Medicine is attached to the Albert Dock Hospital of the Society and the medical staff is as follows:—Physicians: Sir Patrick Manson, K.C.M.G., and Dr. Andrew Duncan. Surgeons: Mr. J. Cantlie and Mr. C. C. Choyce. Assistant Physicians: Dr. F. M. Sandwith and Dr. C. W. Daniels. Ophthalmic Surgeon: Mr. L. V. Cargill. Dental Surgeon: Mr. K. W. Goadby. Assistant Surgeon: Mr. H. Curtis. Director: Dr. C. W. Daniels. Medical Officer East India Dock-road Dispensary: Mr. W. H. F. *Oxley*. Surgeon Gravesend Dispensary: Mr. C. E. Robbs. Secretary: Mr. P. J. Michelli, C.M.G.

WEST LONDON HOSPITAL, Hammersmith-road, W.—This hospital has 160 beds, all of which are constantly in use. About 2600 *in-patients and* 37,000 *out-patients*, whose attendances number 100,000, are treated annually. Attached to the hospital is the West London Post-Graduate College. The practice of the hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms and demonstrations are given in the wards daily. Post-graduate lectures and demonstrations are given daily except Saturdays; notice of the commencement of each course is advertised in the medical journals. Special Classes are held in Diseases of the Throat and Nose, Skin, and Eye, and in Gynæcology, Medical Electricity, Operative Surgery, [illegible] gery, Surface Ana[illegible] opy, Tropical Medi[illegible] Operative Ophthalmolog [illegible] ates consists of a [illegible] and writing rooms, [illegible] pathological laboratory at which instruction is given in elementary bacteriology, a class being held every month. The fees for hospital practice, including lectures, are £6 6*s.* for three months or £15 15*s.* for one year. The certificate of the hospital is accepted by the Admiralty, War Office, and India Office in cases of study leave. Further information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital. Physicians: Dr. Seymour Taylor, Dr. A. P Beddard, and Dr. E. A. Saunders. Physicians for Diseases of Women: Dr. J. A. Mansell-Moullin and Dr. Drummond Robinson. Surgeons: Mr. C. B. Keetley, Mr. F. Swinford Edwards, and Mr. L. A. Bidwell. Surgeon for Diseases of the Eye: Mr. H. P. Dunn. Assistant Surgeon for Diseases of the Eye: Mr. Bishop Harman Assistant Physicians: Dr. H. Davis, Dr. H. Pritchard, and Dr. Grainger Stewart. Assistant Surgeons: Mr. A. Baldwin, Mr. Donald Armour, and Mr. John Pardoe. Surgeon-*Dentist*: Mr. H. Lloyd Williams. Physician in charge of Throat and Nose and Aural Department: Dr. H. J. Davis. Physician in charge of Children's Department: Dr. E. A. Saunders. Surgeon in charge of Orthopædic Department: Mr. C. B. Keetley. Pathologist: Dr. Bernstein. Dermatologist: Dr. P. S. Abraham. Administrators of Anæsthetics: Messrs. T. Gunton Alderton, Rickard W. Lloyd, E. W. Lewis, and G. P. Shuter. Assistant Anæsthetists: Dr. Austin Cooper, Dr. E. F. Travers, and Dr. H. M. Page. Electrician: Mr. E. D. MacDougal. Secretary of the Hospital: Mr. R. J. Gilbert; of the Post-Graduate College: Mr. H. Grant Rawle.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—This hospital is recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. Besides the Honorary Staff there are two resident House Physicians, three resident House Surgeons, five Anæsthetists, Pathologist, and Resident Medical Officer. The hospital contains 179 beds which are now fully occupied. A ward for children under five years of age has been added this year. The large rectangular and circular wards, each of which contains 24 beds, the observation wards, the two operation theatres, general and special out-patient and *pathological departments, are specially designed* with a view of offering the greatest facilities for clinical work. An electrical department is also provided. Medical practitioners are cordially invited to see the general and special practice of the hospital. Demonstrations are given daily in the wards and out-patient departments and during the coming winter session there will be a weekly clinical lecture. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from Mr. Arthur Edmunds, F.R.C.S., 30, Welbeck-street, W. Consulting Physicians: Sir S. Wilks, Bart., Sir R. W. Burnet, and Dr. E. C. Beale. Physicians: Dr. A. Morison, Dr. T. J. Horder, Dr. Symes Thompson, Dr. Willcox, Dr. Hinds Howell, and Dr. H. W. Wiltshire. Obstetric Physicians: Dr. G. F. Blacker and Dr. Cuthbert Lockyer. Physician for Skin: Dr. A. Whitfield. Surgeons: Mr. P. T. B. Beale, Mr. G. B. M. White, Mr. E. C. Stabb, Mr. V. W. Low, and Mr. Arthur Edmunds. Ophthalmic Surgeons: Mr. A. S. Morton and Mr. Geo. Coats. Throat and Ear Surgeons: Mr. E. B. Waggett and Mr. J. Gay French. Dental Surgeon: Mr. C. Peyton Baly.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—This general hospital is in the midst of a densely populated neighbourhood of more than half a million inhabitants. It contains medical, surgical, gynæcological, and children's wards, having in all 125 beds. There are special departments for gynæcological cases, diseases of the eye, ear, throat, and nose, skin diseases, medical electricity and radiography, and dentistry. Operations are performed every afternoon of the week (except Saturday) at 2.30 P.M. Clinical instruction, laboratory classes, and lectures are given daily in the wards and out-patient departments, labora*tories, and lecture hall in connexion with the North-East* London Post Graduate College attached. There are four Resident Medical Officers, and Clinical Assistants are appointed under certain conditions. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, Secretary to the Medical Committee, 26, Welbeck-street, W.; or from *Dr. A. J. Whiting, Dean of the North-*East London Post-Graduate College, 142, Harley-street, W. Consulting Physicians: Sir James Reid, Bart., and Dr. Percy Kidd. Consulting Surgeons: Mr. J. Langton, Mr. G. Lichtenberg, and Mr. Hooper May. Physicians: Dr. R. Murray Leslie, Dr. G. P. Chappel, and Dr. A. J. Whiting. Assistant Physicians: Dr. A. G. Auld *and Dr.* T. R. Whipham. Surgeons: Mr. Walter Edmunds and Mr. H. W. Carson. Assistant Surgeon: Mr. J. Howell Evans. Gynæcologist: Dr. A. E. Giles. Surgeon to Ear, Nose, and *Throat Department*: Mr. H. W. Carson. Ophthalmic Surgeon: Mr. R. P. Brooks. Physician for Skin Diseases: Dr. G. Norman Meachen. Medical Officer in charge of the X Ray and Electrical Departments: Dr. A. H. Pirie. Dental Surgeon: Mr. W. Douston. Anæsthetists: Mr. A. De Prenderville, Mr. F. Herbert Wallace, and Mr. J. F. Trewby. Pathologist: Dr. G. Macdonald. Medical Registrar: Dr. Kenneth Kellie. Surgical Registrar: Mr. E. Gillespie. *Secretary*: Mr. F. W. Drewett.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. (Established 1873).—Physicians: Dr. Fenwick, Dr. Parkinson, and Dr. Addinsell. Assistant Physician: Dr. Kevin Byrne. Surgeon: Sir William J. Collins. Assistant Surgeon: Mr. H. J. Paterson. *Assistant Ophthalmic Surgeon*: Mr. J. Stroud Hosford. Dental Surgeon: Mr. A. Alexander. The hospital contains 100 beds. The in-patients in 1908 were 1312, and the out-patients and casualties numbered 28,707 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Operations: Mondays and Thursdays, 3.30 P.M.

Amalgamated Hampstead General and North-West London Hospitals.—The North-West London Hospital (Kentish Town-road) and the Hampstead General Hospital have now been amalgamated. The out-patients of both hospitals attend exclusively at the North-West London Hospital, where there is a Resident Medical Officer as well as resident nurses. The Hampstead General Hospital accommodates the in-patients from the districts hitherto served by the North-West London Hospital. We append below the present staff of the Amalgamated Hospital so far as the appointments have been made. Consulting Physician: Sir Samuel Wilks, Bart. Consulting Surgeon: Mr. Edmund Owen. Physicians to In-patients: Dr. G. A. Sutherland and Sir John F. H. Broadbent, Bart. Surgeons to In-patients: Mr. J. Jackson Clarke, and Mr. W. H. Clayton-Greene. Physicians to Out-patients: Dr. C. O. Hawthorne, Dr. F. W. Price, and Dr. A. Manuel. Surgeons to Out-patients: Mr. J. W. Thomson Walker. Mr. W. Fedde Fedden, and Mr. G. E. Waugh. Physician for Diseases of the Skin: Dr. S. E. Dore. Gynæcologist: Dr. F. E. Taylor. Ophthalmic Surgeon to In-patients: Sir William J. Collins. Ophthalmic Surgeon to Out-patients: Mr. Malcolm L. Hepburn. Dental Surgeon: Mr. C. H. J. Acret. Throat and Ear: Mr H. S Barwell. Anæsthetists: Dr. G. A. H. Barton and Mr. Hedley C. Visick. Pathologist: Dr. J. A. Torrens. Medical Officer, Roentgen Ray Department: Mr. S. Gilbert Scott. Further particulars from the secretary at the hospital.

New Hospital for Women, 144, Euston-road, N.W.—Physicians for In-patients: Miss Cock, M.D., and Miss Walker, M.D. Surgeons for In-patients: Mrs. Boyd, M.D., and Miss Aldrich-Blake, M.D., M.S. Physicians and Surgeons for Out-patients: Miss Macdonald, M.B., Miss Chadburn, M.D., B.S., Miss Anderson, M.D., B.S., and Miss Woodcock, M.D., B.S. Children's Department: Mrs. Flemming, M.D. Ophthalmic Surgeon: Miss Sheppard, M.B. Assistant Physicians for Out-patients: Miss Chesney, M B., Miss Bolton, M.D., B.S., Miss Woodward, M.B., B.S., Miss Hamilton, M.D., B.S., Miss M. Paine, M.B. Assistant Obstetrician: Miss Turnbull, M.D. Anæsthetists: Miss Browne, L.S.A., Miss Turnbull, M.D., and Miss Payne, M.D. A considerable number of the students hold posts in the New Hospital under the visiting staff, and in return for much valued clinical teaching they do the work assigned to students in the wards of a general hospital. Secretary: Miss M. M. Bagster.

French Hospital and Dispensary, Shaftesbury-avenue, W.C.—This hospital, which was founded in 1867 to afford medical treatment for poor foreigners who speak the French language, has 70 beds. It has a convalescent home at Brighton with accommodation for 61 patients, including a pavilion for the preventive treatment of consumption. Physicians: Dr. G. Ogilvie and Dr. L. Williams. Physicians to the Out-patients: Dr. L. Vintras, Dr. H. Dardenne, and Dr. Alex. Mannel Surgeons: Mr. E. Owen, Mr. H. de Méric, and Mr. W. H. Clayton-Greene. Obstetric Physician: Dr. S Sunderland. Ophthalmic Surgeons: Mr. C. Higgens and Mr. G. W. Thompson. Dental Surgeon: Mr. M. Thomson. Honorary Anæsthetist: Mr. Walter Tyrrell. Anæsthetist: Dr. Percy Bott.

German Hospital, Dalston, N.E.—This hospital was founded in 1845 with the object of supplying medical aid to poor people speaking the German language and for cases of emergency and of accident. It has 130 beds, including a sanatorium with six beds and a convalescent home at Hitchin with 22 beds. Consulting Physician: Sir H. Weber. Consulting Surgeon: Mr. R. W. Parker. Physicians: Dr. F. P. Weber, Dr. K. Fürth, and Dr D. O'C. Finigan. Surgeons: Mr. E. Michels, Mr. J. P. zum Busch, and Mr. G. J. Jenkins. Ophthalmic Surgeons: Mr. R. Gruber and Mr. C. Markus. Anæsthetist: (vacant). Radiographer: Mr. N. S. Finzi. Dental Surgeon: Mr. W. West. Resident Medical Officers: Mr. A. Jurasz, Mr. C. Miéville, Mr. M. Pfister, and Mr. G. Dorner.

Italian Hospital.—This institution was established in 1884 for the maintenance and medical treatment of Italian and Italian-speaking people, irrespective of their religious and political opinions, who may be suffering from sickness or bodily infirmity, but the sick poor of any nationality are also admitted for treatment. The institution also provides surgical and medical relief to Italians and others not being inmates of the hospital. It has 50 beds. Honorary Consulting Physicians: Cav. Dr. M. Castaneda and Sir Dyce Duckworth. Honorary Consulting Surgeon: Sir Frederick Treves. Physicians: Cav. Dr. F. Naumann, Cav. Dr. F. Melandri, and Dr. Vincent Dickinson. Assistant Physician: Dr. Herbert Danvers. Surgeon: Mr. George Lenthal Cheatle, C.B. Assistant Surgeon: Mr. T. P. Legg. Throat and Ear Department: Cav. Mr. J. Donelan. Ophthalmic Surgeon: Mr. Stanford Morton. Consulting Dental Surgeon: Cav. Mr. J. FitzGerald. Assistant Dental Surgeon: Mr. E. Whishaw Wallis. Anæsthetists: Dr. Hugh Richard Phillips and Mr. Laurence Galsworthy.

National Hospital for the Paralysed and Epileptic (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Wednesday, and Friday at 2 P.M. In- and out-patient practice and electrical-room treatment at that hour. Consulting Physicians: Dr. Hughlings Jackson, Dr. Buzzard, Dr. Bastian, and Dr. D. Ferrier. Physicians: Sir William Gowers, Dr. Ormerod, Dr. Tooth, and Dr. James Taylor. Physicians for Out-patients: Dr. J. S. Risien Russell, Dr. Aldren Turner, Dr. Batten, and Dr. J. S. Collier. Assistant Physicians: Dr. F. Buzzard, Dr. Grainger Stewart, and Dr. Gordon Holmes. Surgeons: Sir Victor Horsley, Mr. Donald J. Armour, and Mr. Percy W. G. Sargent. Ophthalmic Surgeon: Mr. Marcus Gunn. Assistant Ophthalmic Surgeon: Mr. Leslie Paton. Laryngologist and Otologist: Mr. Sydney Scott. Gynæcologist: Dr. Walter Tate. Anæsthetist: Dr. Llewelyn Powell. Clinical clerks are appointed under the in-patient physicians. Lectures are given on Tuesdays and Fridays at 3.30. The hospital is a school of the University of London and has been recognised by the Conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Bethlem Royal Hospital.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They will be permitted to reside in the hospital for a term generally not exceeding six months, commencing July 1st and Jan. 1st, and will be provided with apartments, complete board, attendance, washing, and a salary at the rate of £100 per annum. They will be under the direction of the Resident Physician and will be elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital and qualified practitioners and other students may attend for a period of three months on payment of a fee of £3 3*s*. Lectures are also given in connexion with the London School of Clinical Medicine and the London Polyclinic. Resident Physician: Dr. T. B. Hyslop. Senior Assistant Physician: Dr. W. H. B. Stoddart. Junior Assistant Physician: Dr. J. G. Phillips.

Hospital for Consumption and Diseases of the Chest, Brompton (318 beds).—The Sanatorium at Frimley contains 110 beds and 40 beds for paying patients. Four House Physicians reside in the hospital for a period of six months. Pupils are admitted to the practice of the hospital: terms, £1 1*s*. for one month; three months, £2 2*s*.; perpetual, £5 5*s*. Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence in October. Courses of instruction are given in laboratories for one month (£5 5*s*.). Qualified medical men are received as clinical assistants in the out-patient department without fee. Clinical Assistants are appointed to the Assistant Physician in the out-patient department and Clinical Clerks to the Physician in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. The hospital contains 318 beds in the two buildings. Consulting Physicians: Dr. J. E. Pollock, Sir Richard Douglas Powell, Dr. F. T. Roberts, Dr. C. T. Williams, Dr. J. M. Bruce, Dr. T. H. Green, Dr. J. K. Fowler, Dr. T. D. Acland, and Dr. P. Kidd. Physicians: Dr. R. Maguire, Dr.

H. W. G. Mackenzie, Dr. S. H. Habershon, Dr. F. J. Wethered, Dr. P. Horton-Smith Hartley, and Dr. J. J. Perkins. Assistant Physicians: Dr. H. Batty Shaw, Dr. W. C. Bosanquet, Dr. R. A. Young, Dr. C. Wall, Dr. W. J. Fenton, and Dr. A. J. Jex Blake. Consulting Surgeons: Lord Lister and Mr. R. J. Godlee. Surgeon: Mr. S. Boyd. Dental Surgeon: Mr. G. L. Bates. Surgeon to Throat and Ear Department: Dr. Dundas Grant. Superintendent of Laboratories: Dr. A. C. Inman; X-ray Department: Dr. A. H. Greg. Resident Medical Officer: Dr. McNalty.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—During the past year 1158 in-patients have been treated in the wards, and the large number of 41,045 cases since the opening of the wards in 1855. The number of out-pati [illegible] 752,891 since the c [illegible] Information as to medical instruction can be obtained on application to the Secretary of the Clinical Sub-committee [illegible] Thorow- [illegible] William [illegible] arrington Sainsbury. Consulting Surgeon: Lord Lister. Physicians: Dr. G. A. Heron, Dr. T. Glover Lyon, Sir Hugh Beevor, Bart., Dr. W. J. Hadley, Dr. E. H. Colbeck, and Dr. Arnold Chaplin. Surgeon: Mr. G. Lenthal Cheatle. Physicians to Out-patients: Dr. Hugh Walsham, Dr. Oliver K. Williamson, Dr. Clive Riviere, Dr. O. F. F. Grünbaum, Dr. T. Lewis, and Dr. Eric Pritchard. Surgeon Dentist: Mr. Evelyn C. Sprawson. Secretary: H. Dudley Ryder. Secretary of the Medical Committee: Dr. T. Lewis.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road. (80 beds.)—This hospital provides accommodation for 80 in-patients. Expenditure for 1908 £6617 1*s.* 2*d.*; income £5281. The attendance of out-patients averages 27,000 annually. Consulting Physicians: Dr. Horace Dobell, Dr. P. J. Hensley, and Professor D. W. Finlay. Physicians: Dr. W. H. White, Dr. A. Davies, Dr. J. Calvert, Dr. M. Leslie, Dr. J. H. Drysdale, and Dr. A. G. Phear. Assistant Physicians: Dr. H. E. Symes Thompson and Dr. J. Graham Forbes. Consulting Surgeons: Sir Jonathan Hutchinson and Mr. Pearce Gould. Surgeon: Mr. W. Turner. Radiographer: Dr. A. C. Jordan. Resident Medical Officer: Dr. Douglas Reynolds. House Physician: Dr. Gordon Danson. Secretary: Mr. A. T. Mays.

THE MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, HAMPSTEAD AND NORTHWOOD, CENTRAL OUT-PATIENT DEPARTMENT, Fitzroy-square, W.—The Hospitals contain 226 beds. Number of in-patients, 1467; out-patients, 2796. Resident Medical Staff. Lectures and *Clinical Demonstrations are given by* the Visiting Medical Staff at the Hospital at Hampstead and the Out-patient department. The next course begins in October, at the out-patient department. Clinical assistants are appointed [illegible] and in the out-patient depart- [illegible] Sir Hermann Weber and Sir T. [illegible] ulting Surgeon: Sir W. Watson Cheyne, Bart. Physicians: Dr. J. Edward Squire, C.B., Dr. F. W. Tunnicliffe, Dr. George Johnston, Dr. F. Parkes Weber, Dr. T. N. Kelynack, and Dr. T. D. Lister. Assistant Physicians: Dr. F. W. Price [illegible] tho- logist: Dr. F. W. Price. [illegible] rry. Laryngologist: Mr. Harol [illegible] Dr. Herbert Scharlieb, C.M.G. [illegible] C. Colyer.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone-road, N.W.—This hospital receives over 1800 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly three-fourths of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all the Universities, Colleges, and licensing bodies. Pupil midwives and monthly nurses [illegible] Fees: Medical Students, [illegible] Medical Practitioners, [illegible] ives (including board [illegible] Pupil Nurses (including board and lodging), £24 for [illegible] Residential College provides accommodation for 16 men at a time, students and qualified practitioners, and is opposite the hospital, with which it is in telephonic communication. Terms for residence and full board 35*s.* per week. For further particulars application should be made to Mr. Arthur Watts, Secretary at the hospital. Students [illegible]

instruction in Practical Midwifery in accordance with the recommendations of the General Medical Council. This instruction will include: (1) Practical instruction in the methods of examination of pregnant women; (2) delivery of women in labour under the direct supervision of a Medical Officer of the hospital; (3) practical instruction in the treatment of the mother and child during the puerperium, including clinics held four times weekly by the Visiting Medical Staff; and (4) instruction in the Clinical Laboratory of the hospital. The fee for hospital practice will be £5 5*s.* per calendar month. Students will be accommodated at the Residential College adjoining the hospital. Terms for residence and full board, 35*s.* per week. Consulting Physicians: Dr. George B. Brodie and Dr. W. S. A. Griffith. Consulting Surgeon: Mr. Alfred Willett. Physicians to In-patients: Dr. W. Rivers Pollock, Dr. W. J. Gow, Dr. T. W. Eden, and Dr. A. F. Stabb. Physicians to Out-patients: Dr. C. Hubert Roberts and Dr. Thomas G. Stevens.

THE HOSPITAL FOR WOMEN, Soho-square, W.—In connexion with the out-patient department there has been *for* some years a well-organised Clinical Department. [illegible] t as clinical assistants to the [illegible] The appointments are open [illegible] d women. They are entitled to receive notice of all operations performed within the hospital, and every facility is afforded them by the gynæcologists in the out-patient department of obtaining experience in diagnosis and treatment and the practical use of instruments. Fee for one month £2 2*s.*; for each subsequent month the same. The hospital contains 60 beds. In the out-patient department there were over 4000 new cases during the past year, the total number of out-patient attendances being 14,850. This large number affords exceptional opportunities for examining and studying most of the varieties of the diseases of women. Applications should be made to the Dean. Consulting Physicians: Dr. C. H. Carter and Dr. E. Holland. Consulting Surgeon: Mr. H. A. Reeves. Consulting Surgeon Dentist: [illegible] Richard Smith, Dr. J. [illegible] Fenwick (in charge of [illegible] Dr. J. H. Dauber, and D [illegible] ecologist: Dr. H. J. F. Simson. Surgeon: Mr. D. Drew. Assistant Surgeon: Mr. L. H. McGavin. Surgeon Dentist: Mr. W. J. May. Anæsthetists: Mr. C. J. Ogle and Dr. M. Horne. Registrar, Dr. W. A. Milligan.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—The hospital maintains 120 cots, and on an average 245 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months, subject to reappointment if desired. Clinical assistants (qualified men only) are from time to time appointed in the out-patient department. Any additional information may be obtained on applying to Mr. W. M. Wilcox, the Secretary, at the hospital. Physicians: Dr. Eustace Smith, Dr. J. A. Coutts, Dr. Morley Fletcher, Dr. E. Graham Little, and Dr. A. M. Gossage. Surgeons: Mr. W. Trotter and Mr. W. H. Bowen. Assistant Physicians: Dr. Clive Riviere, Dr. O. K. Williamson, and Dr. T. Fisher. Assistant Surgeon: Mr. R. Warren. Ophthalmic Surgeon: Mr. W. I. Hancock. Dental Surgeon: Mr. E. S. Pierrepont. Medical Officer for the Electrical Department: Dr. H. Manders. Medical Officer for the Casualty Department: Dr. J. Scott Burne. Resident Medical Officer: Dr. H. B. Carlyle. House Physician: Mr. C. McNeill. House Surgeon: Mr. F. J. Wheeler. Secretary: Mr. W. M. Wilcox.

The Hospital for Sick Children, Great Ormond-street, W.C., contains 222 beds, divided into 95 medical, 105 surgical, and 22 for special and infectious cases, besides 38 beds at the convalescent branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. The medical staff are recognised by the University of London as teachers in Diseases of Children. Appointments are made every three months to six medical clerkships, which are open to students of the hospital. Lectures or demonstrations are given once every week during both winter and summer sessions, which qualified practitioners are invited to attend free of charge. There is a museum in connexion with the hospital. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 5 guineas; perpetual ticket, 10 guineas. Clinical Clerks, 1 guinea for three months. Consulting Physicians: Dr. W. H. Dickinson, Dr. W. B. Cheadle, Sir Thomas Barlow, Bart., Dr. D. B. Lees, and Dr. F. G. Penrose. Physicians: Dr. A. E. Garrod, Dr. A. F. Voelcker, Dr. W. S. Colman, and Dr. F. E. Batten. Physicians to Out-patients: Dr. G. F. Still, Dr. F. J. Poynton, Dr. Robert Hutchison, Dr. H. Thursfield, and Dr. T. Thompson. Consulting Surgeons: Sir Thomas Smith, Bart., Mr. Howard Marsh, Mr. Edmund Owen, Mr. John H. Morgan, C.V.O., and Mr. Bernard Pitts. Surgeons: Mr. W. Arbuthnot Lane, Mr. Thomas H. Kellock, Mr. H. Stansfield Collier, and Mr. Edred M. Corner. Surgeons to Out-patients: Mr. G. E. Waugh, Mr. H. A. T. Fairbank, and Mr. O. L. Addison. Ophthalmic Surgeon: Mr. J. Herbert Parsons. Aural Surgeon: Mr. G. E. Waugh. Dental Surgeon: Mr. W. Warwick James. Radiographer: Dr. Ironside Bruce. Local Medical Officer for Cromwell House: Dr. A. M. Henderson. Medical Registrar: Dr. Miller. Clinical Pathologist and Bacteriologist: Dr. Graham Forbes. Anæsthetists: Mr. Graham Scott, Mr. E. E. Argles, and Dr. H. S Sington, Resident Medical Superintendent: Mr. H. T. Gray. Secretary: Mr. Stewart Johnston.

Evelina Hospital for Sick Children, Southwark-bridge-road, S.E.—This hospital contains 76 cots and a very extensive Out-patient Department. About ten clinical assistants, to work with the Honorary Medical Staff for Out-patients, are appointed quarterly for a period of three months; there is no salary attached to these posts; but, on the other hand, no fees are charged. Consulting Physicians: Dr. J. F. Goodhart, Dr. Frederick Taylor, and Dr. Nestor Tirard. Physicians: Dr. J. Charlton Briscoe, Dr. T. R. Whipham, and Dr. D. Forsyth. Physicians in charge of Out-patients: Dr. H. C. Mann and Dr. Otto May. Physician in charge of Skin Department: Dr. S. Ernest Dore. Consulting Surgeons: Sir H. G. Howse, Mr. R. Clement Lucas, Mr. G. H. Makins, Mr. F. S. Eve, Mr. F. C. Abbott, Mr. A. H. Tubby, and Mr. C H. Fagge. Surgeons: Mr. H. S. Clogg and Mr. W. M. Mollison. Surgeons in charge of Out-Patients: Mr. C. A. R. Nitch and Mr. P. Maynard Heath. Dental Surgeon: Mr. Denison Pedley. Ophthalmic Surgeon: Mr. Sydney Stephenson. Aural Surgeon: Mr. G. N. Biggs. House Physician: Mr. H. E. Bloxsome. Anæsthetist: Mr. F. D. S. Jackson. Radiographer: Mr. R. H. Cooper. Secretary: H. C. Staniland Smith.

Victoria Hospital for Children, Chelsea, S.W.—The hospital contains 104 beds and has a large out-patient department (over 1200 weekly); the home at Broadstairs has 50 beds. Consulting Physicians: Sir Francis Laking, Sir Wm. Henry Allchin, and Dr. Ridge Jones. Consulting Surgeons: Mr. Cowell, Mr. Pickering Pick, and Mr. D'Arcy Power. Physicians: Dr. Walter Carr, Dr. Humphry D. Rolleston, Dr. Edmund Ivens Spriggs, Dr. Charles Miller, Dr. Reginald Jewesbury, and Dr. Alexander Manuel. Physician to Skin Department: Dr. J. M. H. MacLeod. Surgeons: Mr. H. F. Waterhouse, Mr. Joseph Cunning, and Mr. Fedde Fedden. Surgeons to the Out-patients: Mr. S. Maynard Smith, Mr. Ralph Thompson, and Mr. Harold W. Wilson. Ophthalmic Surgeon: Mr. C. Devereux Marshall. *Dental Surgeon: Mr. Francis R. Smyth. Anæsthetists: Dr.* Randolph Grosvenor, Dr. W. B. Grandage and Dr. C. G. H. Gunning. Electro-Therapeutic and Radiographic Department: Mr. E. S. Worrall. Resident Medical Officer: Mr. A. C. D. Firth. House Surgeon: Mr. J. Alan Simmons. House Physician: Mr. H. F. L. Hugo. Secretary: Mr. H. G. Evered. Out-patients are seen as under:—Diseases of the Eye: Wednesday, 2 P.M. Diseases of the Skin: Wednesday, 2 P.M. Whooping-cough Cases: Fridays, 9.30 A.M. Medical and Surgical Cases: Monday and Thursday mornings at 9 A.M.; any afternoon except Wednesday and Saturday at 12.30 P.M. Dental Cases: Wednesday mornings at 9.30 A.M. Accidents and urgent cases are admitted at any time.

The Queen's Hospital for Children (*late North Eastern Hospital for Children*), Hackney-road, Bethnal Green, E. (Telephone 305 Dalston. Telegrams: "Neh," London). For the sick children of the poor under 12 years of age. Established 1867. 130 beds.—During the past year 1734 in-patients and 30,746 out-patients (representing 74,121 attendances and including 12,834 casualty cases) were relieved, 749 of the in-patients being under two years of age. Consulting Physicians: Dr. W. Cayley, Dr. W. Pasteur, Dr. W. A. Wills, and Dr. James Taylor. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. Waren Tay, Mr. R. J. Godlee, Mr. Bilton Pollard, and Mr. H. Percy Dean. Phy*sicians: Dr. J. Porter Parkinson, Dr. George Carpenter,* and Dr. Charles Bolton. Assistant Physicians: Dr. Sheffield Neave, Dr. R. A. Chisolm, Dr. Eric Pritchard, and Dr. Eric Bellingham-Smith. Surgeons: Mr. Douglas Drew and Mr. Ewen C. Stabb. Assistant Surgeons: Mr. P. Lockhart Mummery and Mr. J. M. G. Swainson. Ophthalmic Surgeon: Mr. Sydney Stephenson (Thursday, 2.30 P.M.). Physician in charge of Skin Department: Dr. J. L. Bunch. Dental Surgeon: Mr. S. F. Rose (Tuesday, 9.30 A.M., and Friday, 2.30 P.M.). Medical Radiographer: Dr. William Hampson. Pathologist and Bacteriologist: Mr. W. Anstruther Milligan. Resident Medical Officer: Dr. E. Bellingham-Smith. Assistant Resident Medical Officer: Dr. J. A. Jamieson. Three other resident medical men (appointed half-yearly)—viz., House Physician and two House Surgeons. Matron: Miss Bushby. Secretary: Mr. T. Glenton-Kerr. The surgeons attend on Wednesdays at 2 P.M. and Fridays and Saturdays at 9.30 A.M.; the physicians daily at 2 P.M., except Saturday, 9.30 A.M., and Wednesday, 9.30 A.M., as well as 2 P.M. *Applications for permission to attend* the practice of the hospital should be addressed to the secretary.

Royal London Ophthalmic Hospital (Moorfields, 1804–1899), City-road, E.C. 138 beds.—This hospital, known as Moorfields Eye Hospital, was moved in 1899 to larger buildings in City-road. In 1908 there were 2331 in-patients, the new out-patients were 46,744, and the attendances were 120,366. Operations are performed daily from 10 A.M. to 1 P.M. and four surgeons attend on each day. Students are admitted to the practice of the hospital. Fee for six months, £3 3*s.*; perpetual, £5 5*s.* Courses of instruction on the following subjects are given at the hospital periodically: (1) examination of the eye; (2) the use of the ophthalmoscope; (3) errors of refraction; (4) external diseases of the eye; (5) surgical anatomy of the eye; (6) motor anomalies; (7) pathology of the eye; (8) practical pathology; (9) bacteriology; (10) operative surgery; (11) X ray work; and (12) clinical lectures. A composition fee of £10 10*s.* will entitle students of the hospital to a perpetual ticket and will admit them once to all the above lectures and demonstrations except the classes on practical pathology, bacteriology, operative surgery, and X ray work. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary. Consulting Physician: Sir Stephen Mackenzie. Consulting Surgeons: Sir Jonathan Hutchinson, Mr. J. Couper, Mr. E. Nettleship, Sir John Tweedy, Mr. W. Tay, and Mr. A. S. Morton. Physician: Dr. J. Taylor. Surgeons: Mr. R. M. Gunn, Mr. W. Lang, Mr. J. B. Lawford, Mr. E. T. Collins, Mr. W. T. H. Spicer, Mr. P. Flemming, Mr. J. H. Fisher, Mr. A. Lawson; and Mr. C. D. Marshall. Assistant Surgeons: Mr. J. H. Parsons, Mr. C. Worth, and Mr. W. I. Hancock. Medical Officer to the X Ray Department: Mr. J. M. Davidson. Curator and Librarian: Mr. G. Coats. Bacteriologist: Dr. B. H. Wedd. Senior *House Surgeon: Mr. N. E. Gibbs.* Second House Surgeon: Mr. W. Ward. Third House Surgeon: Mr. H C. Snell Refraction Assistants: Mr. T. Phillips, Mrs. Warner, and Mr. G. T. Mould.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand.—The hospital *contains 40 free* beds. Patients, who number over 12,000 annually, are seen at 1 P.M., and operations performed daily at 2 P.M. The following are the days of attendance of the surgeons: Mr. Grimsdale and Mr. Brewerton, Mondays and Thursdays; Mr. Roll *and Mr. McMullen, Tuesdays and Fridays*; and Mr. Dodd and Mr. Cruise, Wednesdays and Saturdays. The *practice of the hospital is open* to practitioners and students. Fees for six months, £3 3*s.*; *perpetual*, £5 5*s.* Students of the hospital are eligible for the posts of house surgeon, assistant house surgeon, pathologist, and clinical assistants. Special demonstrations and lectures will be given during the session, commencing early in *October; for* details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgical Staff are appointed for periods of six months. Secretary: Mr. John Hy. Johnson.

Royal Eye Hospital, St. George's-circus, Southwark, S.E.—There *are 40 beds* and *2 cots. There* were 68,890 attendances in the Out-patient Department last year and the new patients numbered 21,923. Operations *are performed*, and out-patients are seen daily at 9 A.M. and 2 P.M. The following are the days of attendance:—Afternoons: Professor M. M. McHardy, Tuesdays and Thursdays; Sir William J. Collins, Mondays and Wednesdays; Mr. L. V. Cargill, Tuesdays and Fridays; and Mr. J. Strond Hosford, Mondays and Saturdays. Mornings: Mr. E. Brooksbank James, Mondays and Thursdays; Dr. H. Willoughby Lyle, Tuesdays and *Fridays. Qualified* practitioners *and students* are admitted to the practice of the hospital upon the recommendation of the medical staff. Courses of instruction in Ophthalmology will be given, commencing October, January, and May. In addition, special lectures and clinical *demonstrations* will be given by the hospital staff on dates to be announced. Fee for the course, including three months' hospital practice, £3 3*s.* Tutorial classes for the various examinations arranged as far as possible *to suit candidates Clinical* assistantships are open to fully qualified practitioners who have received a course of instruction at the hospital. Further particulars may be obtained from the honorary secretary, Dr. H. Willoughby Lyle.

Central London Ophthalmic Hospital, Gray's Inn-road, W.C.—This hospital has 26 beds and possesses facilities for clinical teaching daily. Last year there were 408 in- and 12,104 out-patients (entailing 28,002 attendances). Classes of instruction in the various branches of Ophthalmology will be held during the winter session, commencing in October. The out-patient work begins at 1 o'clock and operations are performed *daily between* 1 and 4. Consulting Physician: Sir Dyce Duckworth, Bart. Surgeons: Mr. T. Brittin Archer, Mr. Ernest Clarke, and Mr. A. P. L. Wells. Assistant Surgeons: Mr. Stephen Mayou and Mr. Malcolm Hepburn. Physician: Mr. Charles O. Hawthorne. Pathologist: Mr Stephen Mayou. House Surgeon: Mr. Wm. Hackney. Dentist: Mr. E. P. May. Secretary: Mr. H. R. S. Druce.

Central London Throat and Ear Hospital, Gray's Inn-road.—In addition to the new In-patient Department and operation theatre the hospital has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year 9993 out-patients (involving 46,859 attendances) and 564 in-patients were treated. The fee for three months' attendance, 5 guineas; for six months, 8 guineas. The post graduate teaching consists of successive series of practical demonstrations by the members of the staff delivered twice weekly during the winter and summer sessions. They are so arranged that practitioners joining at any part of the course are enabled to complete the *group of subjects. A special Operative* Surgery class is held at intervals. The fee for each course is 2 guineas, with daily attendance at the out-patient department during the period of the course. Details of subjects, &c., will be afforded by the Dean. Considerable attention is given to scientific work, particularly with regard *to* Bacteriology of the ear and respiratory passages. Operation days: in-patients, Tuesday, Wednesday, Thursday, and Friday, at 2 P.M.; out-patients, daily at 9 A.M. Consulting Physician: Dr. Arthur Orwin. Surgeons: Dr. Dundas Grant, Dr. Percy Jakins, Mr. Chichele Nourse, Dr. Abercrombie, Mr. Stuart Low, and Dr. Andrew Wylie. Assistant Surgeons: Dr. Atkinson, Dr. McKenzie, and *Mr. Gay French. Pathologist:* Dr. Wyatt Wingrave. Dental Surgeon: *Mr.* Whishaw Wallis. Assistant Dental Surgeon: Mr. Henning James. Anæsthetists: Mr. W. Hotten George and Dr. Beresford Kingsford. Assistant Anæsthetists: Dr. Mortimer and Dr. Crampton. In addition the following appointments are open to qualified members of the profession:—Six Registrars, tenable for twelve months; and sixteen Clinical Assistants, tenable for three or six months. Dean: Dr. Wyatt Wingrave. Secretary: Mr. Richard Kershaw.

London Throat Hospital, 204, Great *Portland-street*, W.—Clinical Demonstrations on the Diseases of the Throat, Nose, and Ear are given daily at 2 P.M. and on Tuesday and Friday evenings at 6 P.M. Operations are performed daily at 9.30 A.M. Individual instruction is given in the examination of cases to students attending the hospital. Fees: one month's attendance, £1 1*s.*; three months, £2 2*s.*; perpetual, £5 5*s.* Detailed information may be obtained from *the Hon. Secretary of the Medical Committee. Surgeons:* Mr. Claud Woakes, *Dr. G. Cathcart, Dr. W. H.* Kelson, and Mr. Atwood Thorne. Assistant Surgeons: Mr. Sommerville Hastings and Dr. Irwin Moore.

The Metropolitan Ear, Nose, and Throat Hospital.—*The hospital was founded in* 1838 *and is situated in Grafton-street, Tottenham-court-road.* The out-patient department is opened daily at 2.30 P.M. to all medical practitioners and senior students for acquiring clinical instruction and technical knowledge. Operations upon in-patients are performed on Tuesdays, Wednesdays, Thursdays, and Fridays at 9.30 A.M. Fee for one month's attendance at the hospital £1 1*s.*, and for three months £2 2*s.* During the forthcoming session practical demonstrations will be given by members of the st[illegible] [illegible] treatment of diseases of the ear and [illegible] course may commence at any t[illegible] [illegible]: Mr. G. Saunders and Mr. J. Pickett. Surgeons: Mr. H. Pegler, Mr. F. Spicer, Mr. W. J. Horne, and Mr. J. C. Potter. Assistant Surgeons: Mr. C. Fox, Mr. B Jones, Mr. A L. Murison, and Mr. E. W. *Bain. Anæsthetists: Mr. C. Looseley and Mr. D. J. Munro. Dentist: Mr. J. A. Bowes.*

Royal Ear Hospital, Dean-street, Soho. (Founded 1816.)—Courses of instruction of a practical character in Diseases of the Ear and Nose are given by the members of the staff throughout the year. Clinical assistants are also *appointed. Students may* join at any time. For information address the Honorary Secretary of the Medical Board, Royal Ear Hospital, Dean-street, Soho. Surgeons: Mr. M. Yearsley and Mr. Richard Lake. Assistant Surgeons: Mr. W. H. Bowen, Mr. R. S. Cocke, Mr. E. A. Peters, and Mr. A. Evans. Anæsthetists: Mr. J. H. Chaldecott and Dr. Harold Sington. Ophthalmic Surgeon: Mr. H. W. Lyle. Dental Surgeon: Mr. F. W. Barrett.

St. Peter's Hospital for Stone and Urinary Diseases, Henrietta-street, Covent Garden. Established 1860. New Hospital opened, 1882.—Honorary Surgeons: Mr. F. Swinford Edwards and Mr. P. J. Freyer. Assistant Surgeons: Mr. John Pardoe, Mr. J. W. Thomson Walker, and Mr. J. Swift Jolly. The hospital contains 30 beds for men and 2 beds for women and children. Consultations are held and operations are performed each Wednesday and Friday at 2 P.M. *Medical practitioners* and students are invited to *the clinical instructions* which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 P.M. Average beds occupied daily, 29; average out-patients seen daily, 125.

St. John's Hospital for Diseases of the Skin Leicester-square, W.C. Rebuilt 1905.—The in-patient department, 40 beds, is at 262, Uxbridge-road, W. The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 4 P.M., and every evening (except Saturday) 6 to 8. At the afternoon clinics specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, will be given. The X ray department is in operation every afternoon except Saturday. The Chesterfield Lectures are given on Thursdays at 6 P.M. October to March in the lecture room at 49, Leicester square. The opening lecture on "The Danger to the Community of the Beauty Specialists—So Called" will be given by Dr Morgan Dockrell on Oct. 7th. At the end of the course the Chesterfield silver medal may be competed for by those who have attended three-fourths of the lectures.

Physicians: Dr. Morgan Dockrell, Dr. M. K. Hargreaves, Dr. Thomas D. Savill, and Dr. Alfred Eddowes. Surgeon: Mr. G. W. Dawson. Assistant Physicians: Dr. Agnes F. Savill, Dr. V. H. Rutherford, Dr. Louis F. Knuthsen, and Dr. William Griffith. Medical Officer to X-ray Department: Mr. Chisholm Williams. There is a well-equipped laboratory where special courses in Pathology and Bacteriology of the Skin may be arranged for.

London Lock Hospital and Rescue Home.—This institution consists of a hospital for females in the Harrow-road and a hospital for males in Dean-street, Soho. At the latter branch an out-patient department is attached and both sexes receive treatment. In the female branch there are 138 beds and 379 patients were admitted in 1908. In the male branch there are 27 beds which during 1908 accommodated 243 patients. 25,213 out-patients were treated. Patients are seen at Dean-street on Mondays from 1 to 2 P.M. and from 6 to 8 P.M.; on Tuesdays and Wednesdays from 6 to 8 P.M.; on Fridays from 2 to 3 P.M. (female patients); and on Saturdays from 2 to 4 P.M. Consulting Surgeons: Mr. Buxton Shillitoe and Mr. J. A. Bloxam. Consulting Ophthalmic Surgeon: Mr. Henry Edward Juler. Physician: Dr. Sidney Phillips. Surgeons: Mr. J. Ernest Lane, Mr. Arthur Shillitoe, and Mr. Charles Gibbs. Surgeons to Out-patients: Mr. Charles Gibbs, Mr. Arthur Shillitoe, Mr. Charles Ryall, Mr. Herbert J. Paterson, and Mr. Ernest C. Hughes. House Surgeon at the Female Hospital: Mr. J. Johnston Abraham. House Surgeon at the Male Hospital and Out-patients' Department: Mr. Basil Wallis.

Cooke's School of Anatomy, Physiology, and Operative Surgery, London.—The school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half-a-dozen students in the course of the year; these have special advantages both as regards Anatomy and Physiology. Charges are but slightly in excess of current charges and particulars are forwarded on application. By the decision of various examining bodies gentlemen rejected at their Anatomical and Physiological Examinations can get signed up for the supplementary work they are required to put in before re-examination. The operations of surgery are performed on the dead body and the courses are recognised for army promotion. The school possesses a good collection of physiological and chemical apparatus, and candidates for the higher examinations receive special instruction in the more difficult subjects.

ENGLISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

Under this heading we include all the hospitals which are recognised by the English Royal Colleges for a part of the required attendance on medical and surgical practice, for medical clerkships, and surgical dresserships. The list includes nearly every hospital of a general character in the country having more than 150 beds, though occasionally a large hospital is omitted because equally good opportunities are afforded to students at other institutions in its neighbourhood, while a small hospital may be included because no such facilities for study are present elsewhere. The list is arranged alphabetically as to the town where the hospital is located.

Bath Royal United Hospital, Bath.—This hospital contains 130 beds. Consulting Physician: Dr. A. E. W. Fox. Consulting Surgeons: Mr. R. J. H. Scott and Mr. F. K. Green. Physicians: Dr. G. A. Bannatyne, Dr. T. W. Smith, and Dr E. J. Cave. Honorary Medical Officers: Dr. G. E. Bowker, Dr. L. H. Walsh, and Dr. R. Waterhouse. Surgeons: Mr. T. D. Ransford, Mr. H. G. Terry, and Mr. F. Lace Assistant Surgeons: Mr. W. S. Melsome, Mr. E. L. Fuller, and Mr. F. Fraser. Physician to Electrical Department: Dr. P. King. Pathologist and Curator of Museum: Dr. R. Waterhouse. Anæsthetist: Mr. J. R. Benson. Assistant Anæsthetist: Dr. W. G. Mumford. Dental Surgeon: Mr. W. J. Royal. Assistant Dental Surgeon: Mr. S. Carter. Secretary: Mr. J. M. Sheppard. House Physicians: Dr. A. J. Bruce-Leckie and Dr. T. McPherson.

Bedford County Hospital, Bedford.—This hospital has 100 beds. Consulting Physician: Dr. G. P. Goldsmith. Consulting Surgeons: Mr. E. C. Sharpin and Mr. R. H. Kinsey. Physicians: Dr. R. Coombs and Dr. W. Phillips. Surgeons: Mr. W. Gifford Nash and Mr. Henry Skelding. Ophthalmic Surgeon: Dr. H. Goldsmith. Assistant Physicians: Dr. A. C. Perram and Dr. G. T. Birks. Assistant Surgeons: Dr. S. J. Ross and Mr. Walter Sharpin. Dental Surgeon: Mr. F. W. Williams. Secretary: Mr. W. F. Morley.

Bradford Royal Infirmary, Bradford.—This hospital contains 220 beds. Consulting Physicians: Dr. Reginald G. Alexander, Dr. Herbert C. Major, and Dr. David Goyder. Physicians: Dr. Henry J. Campbell, Mr. Thomas Wilmot, Dr. Richard Honeyburne, and Dr. F. W. Eurich. Consulting Surgeons: Mr. John N. Terry, Mr. Philip E. Miall, and Mr. Harry Meade. Surgeons: Mr. William H. Horrocks, Mr. Charles F. M. Althorp, Dr. Thomas J. Wood, and Mr. John B. Hall Gynæcologist: Dr. A. C. F. Rabagliati. Laryngologist: Dr. Adolph Bronner. Assistant Surgeons: Mr. James Phillips and Mr. Francis W. Goyder. Assistant Physicians: Dr. John B. Dunlop and Dr. William Wrangham. Electrical Department: Mr. William Mitchell. Dental Surgeon: Mr. Arthur A. Matthews.

Sussex County Hospital, Brighton (196 beds).—This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed clinical research and bacteriological department. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding [illegible] Committee of Management shall direct. [illegible] Dr. Rutter, Dr. Hollis, and Dr. Branfoc [illegible] F. G. Dill, Dr. Hobhouse, and Dr. Maynard. Assistant Physicians: Dr. W. Broadbent, Dr. Hall, and Dr. Bailey. Consulting Surgeons: Mr. H. P. Blaker and Mr. W. Furner. Surgeons: Mr. T. J. Verrall, Mr. R. F. Jowers, and Mr. F. J. Paley. Assistant Surgeons: Mr. A. Buck, Mr. T. H. Ionides, and Mr. W. A. Bowring.

Kent and Canterbury General Hospital, Canterbury.—The hospital contains 104 beds. Pupils of the staff are admitted to the practice of the hospital and have the use of the library of the East Kent and Canterbury Medical Society for £7 7s. Operation day, Thursday, 11 A.M. Physicians: Dr. Harold Wacher and Dr. M. T. Williams. Consulting Surgeons: Mr. James Reid and Mr. Frank Wacher. Surgeons: Dr. T. Whitehead Reid, Mr. J. Greasley, Mr. Sidney Wacher, and Mr. Z. Prentice. Dentist: Mr. R. S. N. Faro. Secretary: Mr. Arthur J. Lancaster.

Derbyshire Royal Infirmary, Derby.—This hospital contains 229 beds. Consulting Physicians: Dr. Charles A. Greaves and Dr. Winfred Benthall. Physicians: Dr. Edmund Vaudrey, Dr. Maurice Parry-Jones, and Dr. Frank B. Thornton. Consulting Surgeons: Mr. John A. Sharp, Dr. William G. Curgenven, Mr. Charles H. Hough, and Mr. John L. Wright. Surgeons: Dr. Richard H. Luce, Mr. John A. Southern, Mr. Francis L. A. Greaves, and Mr. John E. Kilvert. Ophthalmic Surgeon: Mr. Edwin Collier Green. Gynæcologist: Mr. Henry T. Hicks. Anæsthetist: Mr. W. St. A. St. John. Pathologist: Dr. Hugh Barber. Dental Surgeons: Mr. Charles J. Allin and Mr. J. Montague Murphy.

Royal Devon and Exeter Hospital, Exeter.—Medical and Surgical Staff: Consulting Physician: Dr. Drake. Physicians: Dr. H. Davy and Dr. William Gordon. Surgeons: Mr. J. D. Harris, Mr. E. J. Domville, Mr. Charles E. Bell, and Mr. A. C. Roper. Medical Registrar and Pathologist: Mr. Reginald V. Solly. Surgeon Dentist: Mr. J. M. Ackland. Anæsthetists: Mr. Henry Andrew and Mr. J. Shirley Steele-Perkins. The hospital contains 200 beds (including special children's wards) and has a good library, museum, dissecting room, and post-mortem room. Attendance on the practice of this hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery on application to the House Surgeon. There is also a Private Nursing Staff attached to the hospital. For particulars as to fees, &c., apply to the Matron. A new wing was added in 1897. Arrangements may be made by which gentlemen in practice desiring to increase their qualifications may have the use of the museum and library and other facilities and by which students may attend midwifery. A new Operating Theatre was opened in 1906 (the gift of Mrs. Nosworthy, of Newlands, Dawlish, Devon). An Electrical Treatment Department (the gift of Mrs. M. A. Sanders) was opened in 1907 by Lady Duckworth-King.

WEST OF ENGLAND EYE INFIRMARY, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Mr. A. C. Roper and Mr. Ransom Pickard. Assistant Surgeon: Mr. G. P. Hawker. Secretary: Mr. Sidney E. Whitton. The infirmary contains 64 beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1908, 2947.

THE GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester.—This hospital, which was granted the title of "Royal" on the occasion of the King's visit this year, has 140 beds. Consulting Surgeons: Mr. J. P. Wilton, Mr. T. S. Ellis, Mr. R. M. Cole, and Mr. H. E. Waddy. Physicians: Dr. C. W. Clark and Dr. W. W. Grosvenor. Assistant Physician: Dr. D. E. Finlay. Surgeons: Mr. E. D. Bower, Mr. W. Washbourn, and Mr. G. W. Ancrum. Ophthalmic Surgeon: Mr. E. D. Bower. Assistant Surgeon: Mr. C. V. Knight. Secretary: H. P. Pike. In-patients, 1365; out-patients, 8788.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for over 200 patients, including Children's wards, special *Ovarian wards, and a special department for the treatment of* Diseases of the Eye, so that there are unusual facilities for acquiring a practical knowledge of the profession. Physicians: Dr. H. Nicholls and Dr. S. King Alcock. Surgeons: Dr. G. Stokes Hatton and Dr. Wheelton Hind. [illegible] and Dr. W. E. L. [illegible] Alcock and Dr. [illegible] Mr. Herbert H. [illegible] R. H. Dickson. [illegible] Department: Dr. [illegible] Secretary, *pro* [illegible]

HULL ROYAL INFIRMARY, Hull.—This hospital contains 249 beds. Consulting Physician: Dr. Edward O. Daley. Consulting Surgeons: Sir John Sherburn, Mr. Thomas M. Evans, and Mr. Robert H. B. Nicholson. Physicians: Dr. Frank Nicholson, Dr. Frank C. Eve, and Dr. Edward Turton. Surgeons: Mr. Edmund H. Howlett, Mr. Alfred G. Francis, Mr. *Henry W. Pigeon*, and Mr. Edward Harrison. Ophthalmic Surgeon: Dr. William C. Rockliffe. Assistant Ophthalmic Surgeon: Mr. A. L. Roe. Assistant Surgeons: Mr. Harold Upcott, Mr. Edward M. Hainworth, Mr. Robert Grieve, and Mr. Guy B. Nicholson. Dental Surgeon: Mr. John C. Storey.

LEICESTER INFIRMARY, Leicester.—Instruction in the infirmary for first-year students is duly recognised by the various examining bodies. At the General Infirmary there are 198 beds (to be shortly increased to 230), and at the Children's Hospital in connexion 42; total 240. A new wing containing 100 beds has recently been opened by H.R.H. the Duchess of Argyll. A new Nurses' Home containing separate accommodation for 110 [illegible] There are eight [illegible] Sir Charles [illegible] sicians: Dr. [illegible] ey V. Clarke. [illegible] Douglas, Mr. [illegible] Ophthalmic [illegible] urgeon: Dr. [illegible]: Dr. Robert Sevester and Dr. Thomas V Crosby. Assistant Surgeons: Mr. John S. Sloane and Mr Felix B. Carter. House Governor and Secretary, Mr. Harry Johnson.

NORTHAMPTON GENERAL HOSPITAL, Northampton.—Two new wings were opened in 1904 and the old buildings entirely renovated and re-arranged. The number of beds is 166. Non-resident pupils are received and have every opportunity of acquiring a practical knowledge of their profession. The fee is £10 10*s*. Pupils can be received at any time. Physicians: Dr. Frank Buszard and Dr. Peverell S. Hichens. Surgeons: Mr. George H. Percival and Mr. R. A. Milligan. Ophthalmic Surgeon: Mr. E. Harries Jones. Assistant Physician: Dr. W. M. Robson. Assistant Surgeon: Mr. N. Blake Odgers. Dental Surgeon: Mr. E. Rogers Bull.

NORFOLK AND NORWICH HOSPITAL, Norwich.—This hospital has 210 beds. Non-resident pupils admitted. Fees: For three months, £3 3*s*.; for six months, £5 5*s*.; as permanent pupil, £8 8*s*. Consulting Physician: Sir P. Eade. Consulting Surgeons: Dr. Beverley and Mr. H. S. Robinson. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. S. H. Burton, Mr. D. D. Day, and Mr. H. A. Ballance. Assistant Physician: Dr. A. J. Cleveland. Assistant Surgeons: Mr. E. W. Everett and Mr. A. J. Blaxland. Dental Surgeon: Mr. H. F. White. Electro-Therapeutist: Dr. A. J. Cleveland. Secretary: Mr. F. G. Hazell.

NOTTINGH[illegible] 241 beds. [illegible] Physicians: [illegible] and Dr. Frank H. Jacob. Assistant Physicians: Dr. James C. Buckley and Dr. William T. Rowe. Consulting Surgeons: Mr. Thomas Wright and Mr. R. C. Chicken. Surgeons: Dr. H. Owen Taylor, Mr. Alexander R. Anderson, Mr. Joseph Thompson, and Mr. Robert G. Hogarth. Assistant Surgeons: Mr. W. Morley Willis and Mr. Charles H. Allen. *Dental Surgeon*: Mr. George W. Harris.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—This hospital contains 155 beds. Consulting Physician: Dr. R. H. Clay. Physicians: Dr. E. L. Fox and Dr. A. B. Soltau. Consulting Surgeons: Mr. P. Swain and Mr. Connell Whipple. Surgeons: Mr. W. L. Woollcombe, Mr. R. H. Lucy, and Mr. H. W. Webber. Assistant Surgeons: Mr. C. E. R. Rendle, Mr. G. F. Aldous, and Mr. [illegible] Mr. E. G. Smith, and Mr. G. C. F. Robinson. Dental Surgeon: Mr. G. R. Brittan.

THE ROYAL HOSPITAL, Portsmouth (founded 1847).—The number of beds is 132. Honorary Physicians: Dr. John Phillips and Dr. C. C. Claremont. Surgeons: Mr. C. P. Childe, Mr. T. A. M. Forde, and Mr. A. B. Wright. Honorary Anæsthetist: Dr. W. J. Essery. Honorary Assistant Physicians: Dr. W. P. McEldowney, Dr. J. T. Leon, and Dr. E. J. Davis Taylor. Honorary Assistant Surgeons: Mr. L. Cole Baker, Mr. [illegible] The hospital is a pr[illegible] gery; the attendanc[illegible] by the Examining [illegible] at the hospital.

ROYAL BERKSHIRE HOSPITAL, Reading.—This hospital contains 168 beds. Consulting Surgeon: Mr. James H. Walters. Physicians: Dr. Charles W. Marriott and Dr. Francis H. Hawkins. Assistant Physicians: Dr. William T. Freeman and Dr. George S. Abram. Surgeons: Mr. William [illegible] P. Price. Assistant Surgeons: Dr. [illegible] Mr. William J. Foster. Aural [illegible] rts. Ophthalmic Surgeon: Mr. Richard P. Brooks. Consulting Dental Surgeon: Mr. Allan L. Goadby.

SALISBURY GENERAL INFIRMARY, Salisbury.—This hospital contains 120 beds. Consulting Physician: Dr. G. G. Morrice. Physicians: Dr. W. W. Ord and Dr. E. T. Fison. Surgeons: Mr. L. S. Luckham, Dr. C. G. B. Kempe, and Mr. H. L. E. Wilks. Surgeon Dentist: Mr. H. L. Farebrother. Secretary: Mr. S. B. Smith. In-patients, 77 weekly; out-patients, 1071; casualties, 1851; dental cases, 371. Assistant Secretary, Mr. G. F. Henbest.

SALOP INFIRMARY, Shrewsbury.—This hospital has 120 beds. Consulting Physicians: Dr. H. N. Edwards, Dr. E. Burd, Dr. R. W. C. Withers, and Dr. E. Lycett Burd. Physicians: Dr. E. Cureton, Dr. H. W. Gardner, and Dr. R. H. Urwick. Consulting Surgeon: Mr. W. Eddowes. Surgeons: Mr. A. Jackson, Mr. H. H. B. MacLeod, and Mr. L. J. Godson. Ophthalmic Surgeon: Mr. C. G. Russ Wood. Pathologist: Dr. T. L. Webb. Radiographer: Mr. C. E. Salt. Dental Surgeon: Mr. W. E. Harding. Secretary: Mr. Joseph Jenks. In-patients, 1239; out-patients, 2546. Out-patient attendances, 21,055.

ROYAL SOUTH [illegible] AL, Southampton.—T[illegible] ysi-cians: Dr. J. L. [illegible] ant Physicians: Dr. [illegible] Dr. B. N. Tebbs. Su[illegible] and Mr. A. B Wade. [illegible] R. Keele, *and* Mr. [illegible] G. H. Cowen. Th[illegible] Dental Surgeon: [illegible] Department: Dr. N. E. Aldridge. Secretary: Mr. T. A. Fisher-Hall. In-patients, 1946; out-patients, 8900

STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—This hospital has 77 beds. Honorary Consulting Physician: Dr. G. Reid. Physicians: Dr. C. Reid and Dr. W. F. Annand. Surgeons: Mr. F. M. Blumer and Mr. F. H. Marson. Assistant Honorary Surgeon: Mr. F. N. Cookson. Ophthalmic Surgeon: Mr. A B Cridland. Surgeon Dentist: Mr. W. H. Ridge. Secretary: Mr. R. Battle. In-patients, 898; out-patients, 4126.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—This hospital has 108 beds. Honorary Consulting Physicians: Dr. W. M. Harman and Dr. H. E. Wingfield. Physicians: Dr. G. F. A. England, Dr. A. E. Bodington, and Dr. G. A. Tullis. Surgeons: Mr. C. Wace, Mr. H. J. Godwin, and Mr. F. J. Child. Honorary Ophthalmic Surgeon: Mr. J. F. Bullar. Honorary Dental Surgeon: Mr. L. M. Balding. Honorary Secretary: Captain W. Casey, R.N. Assistant Secretary: Mr. A. D. White.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—There are 200 beds. Special departments for Children, Gynæcology, Ear, Throat, and Nose Diseases, Electro-therapeutic and X ray departments. There is an excellent library. The resident officers are a resident surgical officer, a resident medical officer, and two house surgeons. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3*s*. a quarter, £10 10*s*. the first year, and £5 5*s*. subsequent years. A course of Practical Pharmacy is given by the dispenser. Fee £3 3*s*. for three months. Applications should be made to the Secretary of the Medical Committee.

Staff.—Consulting Physician: Dr. W. Millington. Consulting Surgeon: Mr. W. H. T. Winter. Physicians: Dr. H. Malet and Dr. J. A. Codd. Surgeons: Mr. E. Deanesly, Mr. A. H. Hunt, and Mr. W. F. Cholmeley. Assistant Physicians: Dr. A. H. Carter, Dr. E. H. Coleman, and Dr. T. H. Galbraith. Assistant Surgeon: Mr. H. Dent.

WORCESTER GENERAL INFIRMARY, Worcester.—This hospital has 132 beds. Consulting Physician: Dr. E. H. W. Swete. Physicians: Dr. G. W. Crowe, Dr. M. Read, and Dr. H. A. Watson. Consulting Surgeon: Mr. G. E. Hyde. Surgeons: Mr. T. Bates, Mr. T. P. Gostling, and Mr. O. Pollard. Secretary: Mr. W. Stallard. In-patients, 1339; out-patients, 6501.

YORK COUNTY HOSPITAL, York.—This hospital contains 150 beds. Consulting Physician: Dr. Richard Petch. Physicians: Dr. Richard Turner, Dr. William A. Evelyn, and Dr. J. S. Gayner. Surgeons: Mr. William H. Jalland, Mr. Frederick Shann, Mr. G. Wilfred Gostling, and Dr. Noel L. Hood. Consulting Ophthalmic Surgeon: Dr. Tempest Anderson. Ophthalmic Surgeon: Dr. Peter Macdonald. Electro therapeutic Department: Mr. Hinton E. Bateman. Anæsthetist: Mr. Gerald S. Hughes. Dental Surgeons: Mr. Walter Glaisby and Mr. Leonard A. Glaisby.

II.—SCOTLAND.

THE UNIVERSITIES.

UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

A diploma in Tropical Medicine and Hygiene (D.T.M. and H.) is granted to graduates in Medicine and Surgery of the University of not less than six months' standing. The course of study includes (1) Practical Bacteriology; (2) Diseases of Tropical Climates; (3) Tropical Hygiene; (4) a Practical Course in Medical Entomology and Protozoology and Venomous Animals; and (5) a Course of Clinical Instruction in Tropical Diseases. Any two of these courses may be taken under Extra-academical Teachers and exemption from the latter course may be granted to those graduates who have been engaged for a period of at least 12 months in the treatment of Tropical Diseases in any tropical or subtropical country. The examinations for the diploma, which will embrace all the foregoing subjects, are held in December and July of each year.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin or Greek.

No one is admitted to the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least 100 lectures, or 50 lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of 25 meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the *Pharmaceutical* Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, and one of the three following—viz.: Diseases of Children; Diseases of the Larynx, Ear, and Nose; and Diseases of the Skin, or such other special departments as may from time to time be determined. The candidate must have attended, under the superintendence of a registered medical practitioner, 25 cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general hospital or other public charitable institution and have conducted personally 12 or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University

Court. Of the subjects of study, 16 in number—viz., Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh, which corresponds to the two years above referred to.

Women are admitted to graduation in medicine under practically the same conditions as men, excepting that, until provision is made in the University for instruction of women in all subject[illegible] to places of [illegible] not apply to [illegible] their instruction from recognised Extra-Academical Teachers, who are Lecturers in the School of Medicine for Women, Surgeons' Hall.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—*First*, in Chemistry, Zoology, Botany, and Physics; *second*, in Anatomy and Physiology; *third*, in Materia Medica and Therapeutics and Pathology; and *fourth*, in Surgery, Medicine, Midwifery, Forensic Medicine, and Public Health, and clinically in Medicine, Surgery, and Gynæcology in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes. Candidates who have passed their examination in the first division of these subjects may be admitted to examination in the second division at the end of their third winter session. Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in the third division at the end of the fourth winter session. Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in the fourth or final division when they have completed the fifth year of study.

Under a new medical ordinance it is provided that candidates may pass all or any of the subjects of the first division—viz., Botany, Zoology, Physics, or Chemistry—at a university in the United Kingdom or at any other university approved by the Senate for this purpose, when such subjects qualify for a degree in arts or science. In the second division the examination in Physiology may be taken at any time and in Anatomy at any time after the first half session of the third winter session. In the third division the examination in Pathology may be taken at any time after the end of the third summer session in the case of students who begin the medical curriculum in October and at the end of the fourth summer session in the case of students who begin their medical curriculum in May. In Materia Medica the examination may be taken at any time after the end of the fourth winter session. Candidates may be admitted to examination in Practical Pharmacy and in the physical, chemical, and botanical characters of medicinal substances at any examination held after they have completed the qualifying course of study. In the fourth division a student after taking the prescribed courses of study may be examined in Forensic Medicine and Public Health at any time, in Midwifery at any time after the end of the first half session, of the fifth winter session, in the Practice of Medicine and Surgery at any time after the end of the fifth winter session, and in Clinical Medicine (including the subject of Diseases Peculiar to Women) and Clinical Surgery at the end of the fifth year of study. This new ordinance applies to students who entered the University at or after the beginning of the winter session 1907, but students who entered before that date have the option of finishing their course under the existing regulations or of taking advantage of the new ordinance.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2*s*., and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First Division of the Examination (Botany, Zoology, Physics, and Chemistr[illegible] and Physiolog[illegible] and Materia [illegible] Final Division [illegible] Clinical Medicine, Midwifery, Clinical Gynæcology, and Forensic Medicine and Public Health), £7 7*s*.

Bachelors of Medicine and *Bachelors of Surgery* may proceed to the degrees of *Doctor of Medicine* and *Master of Surgery* after they have spent one year in the medical or surgical wards respectively of a hospital, or the Military or Naval Medical Services, or in scientific work bearing directly on their profession, or two years in practice. In each case an examination must be passed and a thesis submitted for approval of the Faculty. The fee to be paid for the degree of M.D. is £10 10*s*., and the fee to be paid for the degree of Ch.M. is £10 10*s*.

Professors—Natural Philosophy: J. G. Macgregor, D.Sc. Materia Medica: Sir Thomas R. Fraser, M.D., F.R.S. Forensic Medicine: Harvey Littlejohn, M.B., F.R.C.S.E. Chemistry: James Walker, D.Sc., F.R.S. Surgery: Alexis Thomson, M.D. Medicine: J. Wyllie, M.D. Anatomy: Arthur Robinson, M.D. Pathology: William Smith Greenfield, M.D. Midwifery: Sir John Halliday Croom, M.D. Clinical Medicine: Sir T. R. Fraser, W. S. Greenfield, and J. Wyllie. Clinical Surgery: F. M. Caird, M.B., F.R.C.S. Botany: I. Bayley Balfour, M.D. Physiology: E. A. Schäfer, F.R.S. Zoology: J. Cossar Ewart, M.D. Public Health, &c.: C. Hunter Stewart, M.B., D.Sc

Scholarships and Prizes.—In the University of Edinburgh many bursaries, scholarships, prizes, &c., are given, some of which, by the nature of the subject or by the conditions attached, are restricted to Medical Students, while others are open to Students in two or more Faculties, of which Medicine may be one. In the following list the money value, the subjects of examination, or other system of selection, and any special conditions that may be imposed, are placed in that order. As "continued study" is a condition in a considerable proportion of the cases it has not been thought necessary to repeat these words.

For Students entering on or in their First Year.—Sibbald Bursaries for entrants, one or two annually, tenable for three years, each £30 per annum, Preliminary Subjects; Heriot Bursaries for entrants, seven for men and one for women annually, tenable for three years, each £30 per annum, Preliminary Subjects; Thomson Bursary, £25 per annum, tenable for four years, Distinction in Medical Preliminary Examination; Grierson Bursary No. 1, £20, Distinction in Medical Preliminary Examination; Crichton Bursaries, two annually, tenable for four years, each £50 per annum, Distinction in Medical Preliminary Examination with extra subjects, birth in Scotland; Mackie Bursary No. 1, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Junior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Chemistry; Coldstream Memorial Scholarship for intending Medical Missionaries, tenable for five years, £25 per annum; three Vans Dunlop Scholarships, Nos. 1, 2, and 3, each tenable for three years, £100 per annum, one for first place in Medical Preliminary Examination, one for Chemistry and Physics, one for Botany and Zoology; Thomson Scholarship, tenable for four years, £40 per annum, Botany, Zoology, and Mechanics.

For Students entering on or in their Second Year.—Mackie Bursary No. 2, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Grierson Bursary No. 2, £20, Chemistry, Botany, Zoology, and Physics; Senior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Physiology; Sibbald Scholarship, tenable for three years, £40 per annum, Chemistry, Botany, Zoology, and Physics; Vans Dunlop Scholarship No. 4, tenable for three years, £100 per annum, Physiology; *Neil Arnott Prize, £37 10s.*, Distinction in Natural Philosophy in the M.A. Examination.

For Students entering on their Third Year.—Grierson Bursary No. 3, £20, Anatomy and Physiology.

For Students entering on their Fourth or Fifth Year or for Graduates.—Syme Surgical Fellowship, tenable for two years, £100 per annum, Thesis by M.B. of not more than three years' standing; Goodsir Memorial Fellowship, tenable for two years, £100 per annum, Thesis by M.B., &c., of not more than three years' standing; Leckie Mactier Fellowship, tenable for three years, £80 per annum, competition among M.B.'s of not more than three years' standing; Freeland Barbour Fellowship, £100, highest marks in Anatomy, [illegible] four Vans Dunlop [illegible] for three years, £100 per annum, one in Anatomy, one in Pathology and Surgery, one in Materia Medica and Medicine, and one in Forensic Medicine, Public Health, and Midwifery; Murchison Memorial Scholarship, interest on £1000, Clinical Medicine; Stark Scholarship, £112, Clinical Medicine, with Research in Clinical Medicine as a condition; Buchanan Scholarship, £40, Midwifery and Gynæcology, with work in gynæcological ward as a condition; James Scott Scholarship, £32 10*s.*, Midwifery, with work in maternity hospital as a condition; Ettles Scholarship for the most distinguished M.B., Ch.B. of the year, £31; Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology, tenable for one, two, or three years, £100 each per annum, competition among graduates; Mouat Scholarship, £55 and medal, Class and Degree Examinations in Practice of Physic; two Grierson Bursaries, Nos. 4 and 5, £10 each, one in Materia Medica and one in Pathology; McCosh Graduate's Bursary and McCosh Medical Bursary for Research, income of £5500, Distinction in Professional Subjects and Knowledge of Foreign Languages, with the condition of Study or Research in Medical Schools of Europe; Gunning Victoria Jubilee Prizes, two awarded annually, each £50, Thesis or Original Research in Anatomy, Physiology, Zoology, Botany, Chemistry, Materia Medica, Surgery, Practice of Physic, Pathology, Obstetrics and Medical Jurisprudence, and Public Health respectively; Theses Gold Medals for the best Theses for the M.D. degree; Conan Doyle Prize for the most distinguished Graduate of the year from South Africa, £32; Wightman Prize, £12, Clinical Reports on Medical Cases; Beaney Prize, £32 10*s.*, highest marks in Anatomy, Surgery, and Clinical Surgery, in M.B. and Ch.B. Examinations; Ellis Prize, £28, Essay on Animal or Vegetable Physiology; Cameron Prize, for the most valuable addition to Practical Therapeutics during the preceding five years, annual proceeds of £2000; Milner Fothergill Gold Medal, about £20, Essay on Pharmacological or Therapeutic subject; Mackay Smith Scholarship for Students in Chemistry, tenable for two years, £25 per annum; Houldsworth Scholarship for Students or Graduates, £40, Materia Medica, with the condition of Research in Pharmacology; Mackenzie Bursaries, two annually, £20, Practical Anatomy; Pattison Prize, about £11 7*s.* 6*d.*, Clinical Reports of Surgical Cases; Dobbie Smith Gold Medal for a Botanical Essay; Anderson Henry Prize for a Botanical Essay, proceeds of £300 accumulated for three years; Gilfillan Memorial Prize for the most distinguished Woman Graduate of the year, about £10.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1000 students avail themselves each session of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards. A post-graduate vacation course commences on August 31st.

The anatomy rooms and laboratories will open on Friday, Oct. 1st, and the lectures will commence on that date.

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school, in addition to the class of Practical Materia Medica and the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have held the office of clerk in their wards for at least six months. Six Residentships are appointed for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the governing board of the school call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Minto House, Nicolson-square, and the New School, Bristo-street.

Lecturers and Fees.—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Dr. Ryland Whitaker (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Mr. Gemmell and Dr. T. W. Drinkwater*; Physiology (Institutes of Medicine), Dr. Alex. Goodall (£3 5*s.*); General Pathology, &c., Dr. Shennan and Dr. James Miller (£3 5*s.*); Biology, Mr. Malcolm Laurie (£3 5*s.*); Zoology, Mr. Malcolm Laurie; Physics, Dr. Dawson Turner (£3 3*s.*); Bacteriology, Dr. Taylor Grant, Dr. Theodore Shennan, and Dr. James Miller; Practice of Physic, Dr. Gibson, Dr. Bruce, Dr. Philip, Dr. R. A. Fleming, Dr. Lovell Gulland, Dr. W. Russell, and Dr. Harry Rainy (£3 5*s.*); Surgery, Mr. Hodsdon, Mr. Wallace, Mr. Miles, Mr. Scot Skirving, Mr. Dowden, and Mr. Chiene (£3 5*s.*); Materia Medica, &c., Dr. Craig and Dr. F. D. Boyd† (£3 5*s.*); Midwifery, &c., Dr. Hart, Dr. Ballantyne, Dr. Haultain, Dr. Haig Ferguson, Dr. Fordyce, Dr. Lamond Lackie, Dr. Elsie Inglis, Dr. McGibbon, and Dr. Barbour Simpson (£3 5*s.*); Medical Jurisprudence, &c., Dr. Aitchison Robertson (£3 5*s.*); Public Health, Dr. Aitchison Robertson and Dr. W. Robertson; Hospital Practice (Edinburgh Royal Infirmary): Physicians, Dr. Bramwell, Dr. Gibson, Dr. Bruce, Dr. Philip, Mr. Wallace, and Dr. Brewis for Gynæcology; Surgeons, Mr. Cotterill, Mr. Cathcart, and Dr. Hodsdon (perpetual ticket, £12); Clinical Medicine, Dr. Byrom Bramwell, Dr. Gibson, Dr. Bruce, and Dr. Philip; Dr. Brewis for Gynæcology (£3 5*s.*); Clinical Surgery, Mr. Cotterill, Mr. Cathcart, Mr. Hodsdon, and Mr. Wallace (£3 5*s.*); Diseases of the Chest, Dr. Philip† and Dr. Lovell Gulland (£2 2*s.*); Vaccination, Dr. Buist† and Dr. W. G. A. Robertson (£1 1*s.*); Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Diseases of the Eye, Dr. Sym† and Dr. J. V. Paterson (£2 2*s.*); Ophthalmoscopy, Dr. A. H. H. Sinclair (£2 2*s.*); Gynæcology, Dr. Haig Ferguson and Dr. Elsie M. Inglis (Systematic), Dr. Brewis and Dr. J. Haig Ferguson (Clinical), and Dr. J. W. Ballantyne (Advanced) (£2 2*s.*); Neurology, Dr. J. J. Graham Brown (£2 2*s.*); Clinical Methods, Dr. W. Russell (£2 5*s.*); Medical Electricity, Dr. Dawson Turner (£2 12*s.* 6*d.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*). Summer Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£2 2*s.*); Practical Physiology, Dr. Goodall (£3 3*s.*); Biology, Mr. M. Laurie‡ and Miss Newbigin (£3 3*s.*); Practical Chemistry and Analytical Chemistry, Mr. Gemmell and Mr. Drinkwater §; Practical Bacteriology, Dr. Shennan, Dr. Taylor Grant, and Dr. James Miller; Materia Medica, Dr. Craig and Dr. F. D. Boyd; Diseases of the Eye, Dr. Sym and Dr. J. V. Paterson (£2 2*s.*); Medical Psychology and Insanity, Sir J. Batty Tuke and Dr. John Keay (£2 2*s.*); Medical Jurisprudence, Dr. Aitchison Robertson; Public Health, Dr. Wm. Robertson (£2 2*s.*); Gynæcology, Dr. Brewis (£2 2*s.*); Midwifery Lectures, Dr. Ballantyne, Dr. Haig Ferguson, Dr. W. Fordyce, Dr. Lamond Lackie, Dr. Elsie Inglis, Dr. McGibbon, and Dr. Barbour Simpson (£3 5*s.*); Operative Surgery, Mr. Hodsdon, Mr. Alex. Miles, Mr. Dowden, Mr. Scot Skirving, and Mr. Chiene (£3 3*s.*); Practical Pathology, Dr. Shennan and Dr. James Miller (£3 3*s.*); Physics, Dr. Turner‡ (£3 3*s.*); Practical Medicine and Physical Diagnosis, Dr. Fleming; Dr. Lovell Gulland, and Dr. Harry Rainy (£3 3*s.*); Clinical Medicine, Dr. Bramwell and Dr. Gibson (£2 2*s.*), Vaccination, Dr. Buist and Dr. W. G. A. Robertson (£1 1*s.*); Neurology, Dr. Bruce and Dr. Graham Brown; Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*); Medical Electricity, Dr. Dawson Turner.

Special Classes for Women, Winter Session: Practical

Anatomy and Demonstrations, Dr. Ryland [illegible] (£4 4s.); Chemistry (Lectures and Practica[illegible] T. W. Drinkwater (£3 5s. and £3 3s.); Practice of [illegible] Dr. W. Russell (£3 5s.); Surgery, Mr. Wade ([illegible]; Midwifery and Diseases of Women, Dr. J. W. Bal[illegible] General Pathology, Dr. James Miller (£3 5s.); Pl[illegible] (Institutes of Medicine), Dr. Goodall (£3 5s.); Materia Medica, &c., Dr. Craig (£3 5s.); Clinical Medicine, Dr. W. Russell, Royal Infirmary (£3 5s.); Clinical Surgery, Mr. Wallace, Royal Infirmary (£3 5s.); Physics, Dr. Dawson Turner (£3 3s.); Vaccination, Dr. Buist and Dr. W. G. A. Robertson (£1 1s.); Practical Gynæcology, Dr. Brewis (£2 2s.); Diseases of the Eye, Dr. W. G. Sym; Bacteriology, Dr. J. Taylor Grant; Tropical Diseases, Major D. G. Marshall; Fevers, City Hospital. Summer Session: Practical Anatomy, Dr. Ryland Whitaker (£2 2s.); Practical Chemistry, Dr. T. W. Drinkwater (£3 3s.); Materia Medica, &c., Dr. Craig and Dr. F. D. Boyd (£3 3s.); Operative Surgery and Surgical Anatomy, Mr. H. Wade (£3 3s.); Materia Medica and Therapeutics, Dr. Wm. Craig (£3 3s.); Practical Materia Medica, Dr. Wm. Craig and Dr. Boyd; Medical Jurisprudence and Public Health, Dr. Aitchison Robertson (£3 5s.); Public Health, Dr. W. Robertson; Clinical Medicine, Dr. W. Russell; Clinical Surgery, Mr. Wallace, Royal Infirmary (£3 5s.) [illegible] Histology, Dr. Goodall (£3 3s.); [illegible] James Miller (£3 3s.); Biology, [illegible] Physics, Dr. Dawson Turner (£3 [illegible] A. H. H. Sinclair (£2 2s.); Ins[illegible] and Dr. John Keay (£2 2s.); [illegible] Dr. J. W. Ballantyne (£2 2s.); [illegible] Philip and Dr. G. Lovell Gulland; Practical Medicine, Clinical Methods, Dr. W. Russell; Vaccination, Dr. W. G. A. Robertson; Tropical Diseases, Major Marshall; Medical Electricity, Dr. Dawson Turner.

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, payment of which is distributed over the period of study. There is no composition fee.

Further particulars regarding the school, also its calendar, may be had on application to the Dean of the School, 11, Bristo-place, Edinburgh.

THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.—The Edinburgh School of Medicine for Women provides all the classes required for a complete curriculum. The classes qualify for the University Degree in Medicine, for the Diploma of the Royal Colleges, and for the Triple Qualification. The lecturers of the school are specially recognised by the Court of Edinburgh University for the education of women who propose taking the degree in medicine of the University of Edinburgh. Most of the classes are held in Surgeons' Hall. The office [illegible] and other conveniences are [illegible] the use of the women stud[illegible] the students is conducted [illegible] mary, specially set apart for the purpose; in the Royal Hospital for Sick Children; in the City Hospital for Infectious Diseases; at Bangour Asylum; and at the various public dispensaries. The fees and the regulations as to the course of study are the same as for the male students. Further particulars can be obtained from the Dean of the School of Medicine for Women, Surgeons' Hall, Edinburgh.

Clinical Instruction.—ROYAL INFIRMARY, Edinburgh.—This hospital has over 900 beds and 60 cots for children, the average daily number of patients for 1908 being 836. Beds are set apart for clinical instruction by the professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the ordinary physicians and surgeons. Special instruction is given on Diseases of Women, Physical Diagnosis, Diseases of the Skin, Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin, and also to cases [illegible] logical Ana[illegible] es for hospital attendance [illegible] ticket, in one payment, £12; annual ticket, £6 6s.; six months, £4 4s.; three months, £2 2s.; monthly, £1 1s. Separate payments amounting to £12 12s. entitle the student to a life ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows:—1. Resident physicians and surgeons are appointed and live in the house free of charge. The appointment is for six months but may be renewed at the end of that period by special recommendation. 2. Non-resident house physicians and surgeons and clinical assistants are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologist.

Staff: Medical Department.—Consulting Physicians: Dr. Claud Muirhead, Dr. J. O. Affleck, Dr. Andrew Smart, and Dr. Alexander James. Consulting Gynæcologists: Professor [illegible] J. Halliday Croom and Emeritus Professor Sir A. R. [illegible]pson. Consulting Physician for Diseases of the Skin: [illegible] W. Allan Jamieson. Professors of Clinical Medicine: [illegible] T. R. Fraser, Dr. W. S. Greenfield, and Dr. John Wyllie. Ordinary Physicians and Lecturers on Clinical Medicine: Dr. Byrom Bramwell, Dr. Geo. Gibson, Dr. Alex. Bruce, Dr. R. W. Philip, and Dr. W. Russell. Gynæcologists: Dr. A. H. F. Barbour and Mr. N. T. Brewis. Physician for Diseases of the Skin: Dr. Norman Walker. Assistant Physicians: Dr. G. Lovell Gulland, Dr. J. J. Graham Brown, Dr. Francis D. Boyd, Dr. R. A. Fleming, Dr. Harry Rainy, Dr. Chalmers Watson, Dr. Edwin Bramwell, and Dr. Edwin Matthew. Assistant Gynæcologists: Dr. J. Haig Ferguson and Dr. Wm. Fordyce. Assistant Physicians for Diseases of the Skin: Dr. Fred. Gardiner and Dr. R. Cranston Low. Medical Electrician: Dr. Dawson Turner. Assistant Medical Electrician: Dr. Hope Fowler. Medical Registrar: Dr. A. Dingwall Fordyce.

Surgical Department.—Consulting Surgeons: Mr. Joseph Bell, Mr. A. G. Miller, Dr. P. H. Maclaren, and Dr. C. W. MacGillivray. Consulting Ophthalmic Surgeon: Mr. George A. Berry. Consulting Aural Surgeons: Dr. P. McBride and Dr. McKenzie Johnston. Consulting Dental Surgeon: Dr. John Smith. Regius Professor of Clinical Surgery: Mr. F. M. Caird. Professor of Surgery: Mr. Alexis Thomson. Ordinary Surgeons: Mr. J. M. Cotterill, Mr. C. W. Cathcart, Mr. J. W. B. Hodsdon, and Mr. D. Wallace. Ophthalmic Surgeons: Dr. George Mackay and Dr. Wm. G. Sym. Surgeons to Ear and Throat Department: Dr. A. Logan Turner and Dr. J. Malcolm Farquharson. Dental Surgeons: Mr. William Guy and Mr. J. H. Gibbs. Assistant Surgeons: Mr. Alexander Miles, Mr. J. W. Dowden, Mr. A. A. Scot Skirving, Mr. Geo. L. Chiene, and Mr. W. J. Stuart. Assistant Ophthalmic Surgeons: Dr. J. V. Paterson and Dr. A. H. H. Sinclair. Assistant Surgeons to the Ear and Throat Department: Dr. John S. Fraser and Dr. John D. Lithgow. Pathologist: Dr. Theodore Shennan. Assistant Pathologists: Dr. W. T. Ritchie (Clinical Pathology), and Dr. Carnegie Dickson and Dr. J. D. Comrie (Morbid Anatomy). Surgical Registrar: Dr. Scott Carmichael. Superintendent: Colonel W. P. Warburton, I.M.S. (retired), M.D., C.S.I.

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital contains 120 beds, and is fitted with every modern improvement. A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. Full particulars can be obtained from the Registrar at the hospital.

Staff.—Consulting Physician: Dr. J. Carmichael. Consulting Surgeon: Dr. J. Bell. Consulting Surgeon Dentist: Dr. J. Smith. Pathologist: (vacant). Ordinary Physicians: Dr. G. H. M. Dunlop, Dr. J. Thomson, and Dr.

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* Lectures, £3 5s.; Practical, £3 3s.; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3s.; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

J. S. Fowler. Surgeon: Mr. H. J. Stiles. Ophthalmic Surgeon: Mr. G. A. Berry. Assistant Surgeon: Mr. E. W. S. Carmichael. Medical Electrician: Dr. J. W. Spence. Extra Physicians: Dr. W. B Drummond, Dr. J. W. Simpson, and Dr. Dingwall Fordyce. Anæsthetists: Dr. D. C. A. M'Allum and Dr. J. Politachi.

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH, 6, Cambridge-street, Lothian-road.—Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 P.M. for out-door Ear, Nose, and Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeons: Dr. Joseph Bell, Dr. Logan Turner (Ear, Nose, and Throat Department). Surgeons: Dr. William George Sym, Dr. Malcolm Farquharson, Dr. J. V. Paterson, Dr. E. M. Lithgow, Dr. W. G. Porter. and Dr. John M. Darling. Honorary Anæsthetist: Mr. J. H. Gibbs. Dental Surgeon: Mr. G. W. Watson. Treasurer and Secretary: Mr. J. P. Watson, W.S., 32, Charlotte-square.

UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but eight of the subjects other than clinical must be taken in this or some other recognised university entitled to confer the degree of M.D., and at least two years of the course must be taken in Glasgow University. Under the new regulations six degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M.; B.Sc. in Public Health; D.Sc. in Public Health; and B.Sc. in Pharmacy. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, with possible options to students whose native language is not English in the case of the fourth subject. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination but must do so at not more than two occasions.

For the degrees of M.B. and Ch.B. a curriculum of five years is required, in each of the first four of which the student must attend at least two five months' courses, or alternately one five months' course and two courses of two and a half months. The minimum of attendance in the first four years includes five months' courses in the following subjects:—Anatomy, Practical Anatomy (two courses), Chemistry, Materia Medica and Therapeutics, Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women and Infants, and Pathology; and courses of two and a half months in the following: Practical Chemistry, Physics, Botany, Zoology, Practical Physiology, Practical Pathology, Medical Jurisprudence, and Public Health. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted as clerk in medical and dresser in surgical wards, and must have had six months' outdoor practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 12 cases of labour, or three months of the Practice of a Lying-in Hospital, six cases being personally conducted. The University also requires further study in Post-Mortem Examinations, Fevers, and Ophthalmology, and recommends study in other special subjects. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics, or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry, to be taken after the completion of the included courses (candidates being at liberty to take two subjects at a time); the second comprising Anatomy, Physiology, and Materia Medica and Therapeutics, to be taken at the end of the third winter session; the third comprising Pathology, Medical Jurisprudence, and Public Health, to be taken at the end of the fourth winter session; and the fourth or final, comprising Surgery, Clinical Surgery, Practice of Medicine, Clinical Medicine, and Midwifery, to be taken on completion of the fifth year of study.

The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

Fees.—The Fees for M.B. and Ch.B. are £23 2*s*. The class fee in each subject of the curriculum for M.B. and Ch.B. is £2 2*s*., £3 3*s*., or £4 4*s*., and the present fees for hospital attendance are £10 10*s*. The fee for M.D. is £10 10*s*. (stamp duty being now abolished), and for Ch.M. £10 10*s*.

The great majority of the students take their hospital course at the Western Infirmary, where clinical instruction is given by professors of the University and others. Clinical instruction on Fevers is given at Ruchil and Belvidere Hospitals, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Ear, the Throat and Nose, and Insanity. Queen Margaret College, hitherto conducted as a separate institution for the higher education of women, has now been made over to the University, and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical instruction female students are admitted to the Royal Infirmary.

Professors—Natural Philosophy: A. Gray, LL.D., F.R.S. Materia Medica: Ralph Stockman, M.D. Chemistry: John Fergusson, LL.D. Surgery: Sir William Macewen, M.D., F.R.S. Practice of Medicine: Sir Thomas McCall Anderson, M.D. Midwifery: Murdoch Cameron, M.D. Anatomy: John Cleland, M.D., F.R.S. Zoology: John G. Kerr, M.A. Botany: F. O. Bower, D.Sc., F.R.S. Physiology: D. Noel Paton, M.D. Forensic Medicine: John Glaister, M.D. Clinical Surgery: Sir H. C. Cameron, M.D. Clinical Medicine: S. Gemmell, M.D. Pathology: Robert Muir, M.A., M.D.

In this University Bursaries and Prizes to the annual amount of over £1000 are appropriated to students in the Medical Faculty, and there are, moreover, several Scholarships and Fellowships which may be held by medical students who have gone through the Arts course. The designation, money value, subjects of examination or other method of selection, conditions of eligibility, &c., of the Bursaries and Prizes are as follows:—Two Highland Society Bursaries, tenable for five years, open to medical students of Highland descent, £25 each, awarded on results of Preliminary Examination; Mackintosh Mental Science Bursary, open to medical students of either sex attending the Lectures on Insanity, £31; Monteith Bursary, tenable for two years, awarded on results of Second Professional Examination, £21, Anatomy and Physiology; Dr. Thomas Gibson Bursary, tenable for four years, open to medical students preparing to be Missionaries, £36, competition at the First Professional Examination; Coats Scholarship, open to graduates in medicine of not more than three years' standing, holder to prosecute research in pathology, £80, Pathology; John Macfarlane Bursary and Lorimer Bursary, each tenable for three years and open to medical students entering on their second winter session, £40 and £24 respectively; two Armagh Bursaries, open to students of either sex presenting themselves for the Final Examination for the degree of M.A. and intending to study Medicine, £48 each, one tenable for three years awarded for honours in Mental Philosophy, one tenable for two years awarded for honours in Classics; Taylor Bursary, tenable for four years, open to students of either sex in any Faculty, £7, appointment by the Senate; William Gardiner Bursary, tenable for two years, open to medical students of either sex, £14, Physiology, Chemistry, and Physics of Professional

Examinations; Rainy Bursary, tenable for two years, open to medical students entering on their fourth winter session, £20, Anatomy, Physiology, Chemistry, Botany, and Zoology; two Paterson Bursaries, tenable for four years, open to medical students of first or second session, £25 and £20 respectively, Mathematics and Dynamics; Brunton Memorial Prize, awarded annually to the most distinguished graduate in medicine of the year, £10; Dobbie Smith Gold Medal, awarded annually for an Essay on any Botanical subject; two Arnott Prizes, £20 and £15 respectively, Physiological Physics, &c.; Andrew and Bethia Stewart Bursary, tenable for three years, open to M.A. Graduates of the University, £50, Special Examination; Weir Bursary, awarded on result of Second and Third Professional Examinations, £16; McCunn Medical Research Scholarship, open to medical graduates of Scottish Universities, £100; (see University Calendar).

ANDERSON'S COLLEGE MEDICAL SCHOOL, Dumbarton-road, Glasgow, W.—This medical school was founded in the year 1800. It has given 13 professors to the University of Glasgow. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy, Professor A. M. Buchanan; Physics, Professor Peter Bennett; Chemistry, Professor J. Watson; Botany, Professor B. G. Cormack; Zoology, Professor Geo. Bell Todd; Materia Medica, Professor John P. Duncan; Midwifery, Professor John Edgar; Surgery, Professor G. H. Edington; Practice of Medicine, Professor John Cowan; Ophthalmic Medicine and Surgery, Dr. T. Spence Meighan; Aural Surgery, Dr. J. Galbraith Connal; Diseases of Throat and Nose, Dr. John Macintyre; Public Health (Laboratory Course), Professor Carstairs C. Douglas. In summer: Anatomy, Practical Anatomy, and Osteology; Practical Chemistry; Botany and Practical Botany; Zoology and Practical Zoology; Practical Physiology; Practical Materia Medica and Pharmacy; Medical Jurisprudence (Professor Carstairs C. Douglas); Diseases of Women and Children (Professor John Edgar); Operative Surgery; Ophthalmic Medicine and Surgery; Aural Surgery; Mental Diseases (Dr. John Carswell); and Public Health (Lecture Course and Laboratory Course). The Chemical Laboratory is open daily from 10 to 5. The Dissecting-room is open in winter from 9 A.M. to 6 P.M., and in summer from 6 A.M. to 6 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the Licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are conducted at the Glasgow Dental Hospital and School.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of it, and four minutes' walk of the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Botany, Practical Zoology, Practical Physiology, Practical Pharmacy, and Operative Surgery. Ample provision has also been made for the comfort of students.

Class Fees.—For each course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, Mental Diseases, and Public Health excepted), first session, £2 2*s*; second session (in Anderson's College), £1 1*s*. For Practical Classes (except Anatomy, Chemistry, and Public Health)—namely, Botany, Zoology, Physiology, Pharmacy, and Operative Surgery—first session, £2 2*s*.; second session, £2 2*s*. Anatomy Class Fees: Winter, first session, Lectures and Practical Anatomy, £5 5*s*.; Practical Anatomy alone, £2 2*s*. Second session, Lectures and Practical Anatomy, £5 5*s*.; Practical Anatomy alone, £2 2*s*. Third session, Practical Anatomy, £1 1*s*. Summer, Lectures and Practical Anatomy, £2 12*s*. 6*d*.; Lectures alone, £1 11*s*. 6*d*.; Practical Anatomy alone, £1 11*s* 6*d*.; Osteology and Practical [illegible]ogy alone, £1 11*s*. 6*d*.; Prac- [illegible] Chemistry: Lectures, £2 2*s*.; [illegible] Botany and Zoology: Reduced fees for Lectures with Laboratory work in Botany *or* in Zoology, during same summer session, £3 3*s*.; for Lecture Class or Practical Class separately, in Botany or in Zoology, £2 2*s*. Ophthalmic Medicine and Surgery (including Hospital Practice), Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, fee for each course, £1 1*s*. Public Health Laboratory, fee for six months' course, £12 12*s*. Matriculation Fees: For the year, 10*s*.; for one class in winter session alone, 5*s*.; for summer session alone, 5*s*.

Western Infirmary.—Fees: For Hospital Attendance, £10 10*s*.; afterwards free. For Clinical Instruction, winter, £3 3*s*.; summer, £2 2*s*. Pathology: systematic, £4 4*s*.; practical, £3 3*s*. Vaccination fee, £1 1*s*.

Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10*s*.; second year, £10 10*s*.; afterwards free. Six months, £6 6*s*.; three months, £4 4*s*. Pathology, both courses, £4 4*s*. Vaccination Fee, £1 1s.

Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee.

Maternity and Women's Hospital.—Fee for six months, £3 3*s*.

Royal Hospital for Sick Children.—Fee for one year, £1 1*s*.

Eye Infirmary.—Fee: Hospital Practice and Clinical instruction, including Lectures at the College, six months, £1 1*s*.

Lock Hospital.—£1 1*s*.

Fever Hospital, Belvidere or Ruchill.—Fee, £1 1*s*.

Hospital for Skin Diseases.—Fee, £1 1*s*.

The Carnegie Trust extends its benefactions to students at Anderson's College Medical School. Full particulars may be obtained from Mr. W. S. McCormick, the Carnegie Trust Offices, Merchants' Hall, Edinburgh.

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. The courses of Laboratory Instruction and Lectures in Public Health are recognised by the Scottish Colleges; by the Royal College of Physicians and the Royal College of Surgeons, Ireland; and by the University of Cambridge. Communications relating to the Medical School to be addressed to the Secretary of the Medical Faculty, Anderson's College Medical School, Glasgow, W. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Alexander Mackay, Educational Institute Office, 34, North Bridge-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, LL.D., Faculty Hall, 242, St. Vincent-street, Glasgow. Communications relating to the Dental School to be addressed to Mr. D. M. Alexander, 97, West Regent-street, Glasgow.

The Malcolm Kerr Bursary in Anatomy (value about £10) is open to students of the Junior Anatomy Class during Winter Session 1909–10.

The Wir [illegible], Oct. 11th, 1909, and [illegible] 1910.

The Su [illegible] Tuesday, April 19th, 1910, and will be closed on Tuesday, June 28th, 1910.

ST. MUNGO'S COLLEGE AND GLASGOW ROYAL INFIRMARY.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies new buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. Recent additions consist of Public Health, Practical Zoology, and Bacteriological Laboratories. A complete electric light installation has been added and a powerful Educational Lantern has been provided for demonstration purposes. The Royal Infirmary, which is at the service of the

College for the purpose of clinical and practical instruction, is one of the largest hospitals in the kingdom. The winter session will open on Monday, Oct. 11th.

Psychological Medicine.—Practical instruction is given in Woodilee Asylum, situated within a short distance of Glasgow and having accommodation for 850 patients. Six resident clinical clerks are appointed annually. These clerkships are open to students attending St. Mungo's College.

Clinical Instruction in Fevers.—Classes are conducted by Dr. Johnston, Superintendent, at the City of Glasgow Fever Hospital, Belvidere; and Dr. Brownlee, Superintendent, at the City of Glasgow Fever Hospital, Ruchill.

Clinical Instruction in Midwifery.—The close proximity of the Maternity Hospital enables the Professor of Midwifery to conduct frequent clinical demonstrations there during the summer session.

The classes in St. Mungo's College qualify for the English, Scotch, and Irish Conjoint Boards and, under certain conditions, for the various universities, including the University of London. Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction, age (16 years), and Preliminary Examination, are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The fee for each class is £2 2*s.*, except Zoology and Botany, joint fee £3 3*s.*, Anatomy, Winter Session, £4 4*s.*; Pathology, £4 4*s.*, Physics, £2 4*s.* 6*d.*, Public Health Laboratory, £12 12*s.*, and certain extra classes for which the fee is £1 1*s.* The hospital fee (including clinical lectures) is £21 for a perpetual ticket.

The classes in St. Mungo's College are now open to male and female students equally.

The minimum fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons amount to £65. Further particulars can be obtained from a syllabus which may be procured free on application to the Dean, 86, Castle-street, Glasgow.

GLASGOW WESTERN MEDICAL SCHOOL.—This School is situated in University-avenue, close to the University and Western Infirmary. Lectures and Demonstrations are given on Chemistry, on Anatomy, on Surgery, on Midwifery and Gynæcology, on Medicine, and on the Eye. Some of the classes qualify for graduation and for Scotch diplomas.

Class Fees.—For each course of Lectures the fee is £2 2*s.*, or in some cases £1 1*s.* There is no matriculation fee.

Lecturers: Winter Session.—Chemistry: Dr. Neave; Anatomy: Dr. Wright Thomson, Tuesday, Wednesday, and Friday, at 4.15 P.M.; Surgery: Dr. A. Young, at 12 noon; Midwifery: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. A. B. Sloan, at 3 P.M.; The Eye: Dr. Fergus, Monday and Thursday, at 4 P.M.

Summer Session.—Chemistry: Dr. Neave; Anatomy: Dr. Wright Thomson, Tuesday and Friday, at 3.15 P.M.; Operative Surgery: Dr. A. Young, Monday, Wednesday, and Friday, at 1 P.M.; Gynæcology: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. A. B. Sloan, Monday, Tuesday, and Friday, at 4 P.M.; Ophthalmology: Dr. Fergus, Monday and Thursday, at 11 A.M. and 3 P.M. Some of the above hours are liable to alteration. Further particulars can be obtained from the Secretary, Mr. J. N. Morton, 58, Bath-street.

QUEEN MARGARET COLLEGE, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its buildings, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the women's department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The number of students enrolled in session 1908-1909 was 676, of whom about 80 were studying medicine and the rest arts or science. The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish university, women students graduated in medicine at the "capping" in Glasgow University. 141 women have now taken the degree of M.B., C.M., or M.B., Ch.B. of the University of Glasgow. The women students work in the University laboratories for Physics, Zoology, Botany, Physiology, Pathology, Medical Jurisprudence, and Public Health, and have special laboratories for Chemistry and Anatomy at Queen Margaret College. Excellent facilities for clinical work are given in the Royal Infirmary, in the New Maternity, and other hospitals. By a gift of £5000 granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large building for the study of Anatomy and other medical subjects which was opened in October, 1895. The Arthur Scholarship is open every third year to students of first year; other Bursaries are open in Arts and Medicine; and by an ordinance of the Universities Commissioners women are admitted to certain University bursaries, scholarships, and fellowships. A house of residence for the students of the College coming from a distance was opened by the Queen Margaret Hall Co., Limited, in October of 1894. The Winter Session commences on Oct. 11th.

Lecturers (other than University Professors).—Anatomy: Dr. T. H. Bryce. Chemistry: Dr. H. W. Bolam. Medicine: Dr. W. K. Hunter. Surgery: Mr. J. H. Pringle. On the Eye: Dr. A. M. Ramsay.

ROYAL INFIRMARY, Glasgow.—This infirmary, which is the largest in Glasgow, is situated in Cathedral-square, Castle-street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds. The infirmary has, including the Ophthalmic Department, over 620 beds, the average number occupied in 1908 being 625. When the rebuilding of the infirmary, now in progress, is completed it will have about 700 beds. There are special beds and wards for diseases of women, of the throat, nose, and ear, venereal diseases, burns, and septic cases. Wards are set apart for the teaching of Women Students. At the Out-door Department the attendances in 1908 numbered over 140,000. In addition to the large medical and surgical departments there are departments for special diseases—viz., diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. Five house physicians and nine house surgeons, having a legal qualification in medicine and surgery, who board in the hospital free of charge, are appointed every six months. Clerks and dressers are appointed by the physicians and surgeons. As a large number of cases of acute diseases and accidents of a varied character are received these appointments are very valuable and desirable. There is a modern and fully equipped Electrical Pavilion and year by year the latest and most approved apparatus for diagnosis and treatment has been added. The fees for hospital attendance, including clinical lectures and tutorial instruction, attendance at the out-door department, at the pathological department, post-mortem examinations, and the use of the museum are as follows: For one year, £10 10*s.*; for six months, £6 6*s.*; for three months, £4 4*s.* Students who have paid fees to the amount of £21 to the Glasgow Royal Infirmary shall be permitted to attend in any subsequent year or years one winter and one summer course of instruction in the infirmary without further payment; and students who have paid to any other hospital in the United Kingdom fees, being not less than £21, in virtue of which they are entitled to attend without further payment, shall be admitted as students of the Royal Infirmary on payment of £3 3*s.* for six months or £1 11*s.* 6*d.* for three months.

Staff.—Visiting Physicians: Dr. G. S. Middleton, Dr. T. K. Monro, Dr. W. K. Hunter, Dr. J. M. Cowan, and Dr. J. B. Mackenzie Anderson. Visiting Surgeons: Mr. John Barlow, Mr. J. A. Adams, Mr. David Newman, Mr. Q. McLennan, Mr. J. H. Pringle, Mr. H. Rutherfurd, and Mr. P. Paterson. Consulting Surgeon for Diseases of the Eye: Dr. A. Maitland Ramsay. Surgeon for Diseases of the

Throat and Nose and Consulting Medical Electrician: Mr. J. Macintyre. [illegible] for Diseases [illegible] and Curator [illegible] Pathologist: [illegible] McCrorie. Assistant Bacteriologists: Mr. J. A. Campbell and Dr. Lizzie T. Fraser. Medical Electrician: Mr. J. R. Riddell. Assistant Medical Electricians: Dr. Samuel Capie, Dr. Katharine M. Chapman, and Dr. Janie S. McLachlan. Anæsthetists: Dr. John Donald and Dr. R. Bruce. Vaccinator: Dr. H. H. Borland. Dispensary Physicians: Mr. David McCrorie, Dr. John Henderson, Dr. Campbell S. Marshall, Dr. James Scott, Dr. J. T. McLachlan, and Dr. A. W. Harrington. Extra Dispensary Physicians: Dr. Dugald McPhail, and Dr. Wm. H. Brown. Dispensary Surgeons: Mr. A. N. McGregor, Mr. John Patrick, Mr. John A. C. Macewen, Mr. A. C. Faulds, Mr. Thomas Kay, and Mr. Robert Ramsey. Extra Dispensary Surgeons: Mr. James Battersby, Mr. Donald Duff, and Mr. Spencer Mort. Dispensary Specialists:—*Diseases of Women*: Dr. Peter McBryde, Dr. W. D. Macfarlane, jun., Dr. A. G. Banks, and Dr. Margaret H. Smart; Diseases of the Ear: Dr. James Adam; Diseases of the Skin: Dr. Alexander Morton and Dr. G. McIntyre; Diseases of the Throat and Nose: Dr. R. Fullerton and Dr. Grant; Diseases of the Eye: Dr. J. Rowan, Dr. H. W. Thomson, and Dr. J. H. McIlroy; Diseases of the Teeth: Mr. W. Taylor and Mr. W. R. Taylor. Superintendent: Dr. J. Maxtone Thom.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the *University of Glasgow*. Number of beds upwards of 520. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, and Tooth. The Clinical Courses are given by the physicians and surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the [illegible] annually, without salary, from those who have completed their course. The fee for hospital attendance is £10 10*s*. and the fees for clinical instruction are £3 3*s*. for the Winter Session and £2 2*s*. for the Summer Session.

Staff.—Honorary Consulting Physician: Dr. G. P. Tennant. Honorary Consulting Gynæcologist: Dr. W. L. Reid. Visiting Physicians: Dr. Samson Gemmell, Dr. Ralph Stockman, and Dr. Wm. MacLennan. Visiting Surgeons: Sir Hector C. Cameron, Sir W. Macewen, Dr. J. C. Renton, Sir George T. Beatson, K.C.B., Dr. T. K. Dalziel, and Dr. James H. Nicoll. [illegible] of Women: Dr. Murdoch Cameron [illegible] Assistant Physicians: Dr. R [illegible] Dr. James Carslaw, and Dr. John S M'Kendrick. Assistant Surgeons: Dr. Duncan Macartney, Dr. Robert Kennedy, Dr. Alfred A. Young, Dr. G. B. Buchanan, Dr. John Morton, and Dr. G. H. Edington. Dispensary Physicians: Dr. Robert Fullarton, Dr. John Gracie, Dr. J. Campbell McClure, Dr. Frank Charteris, Dr. A. B. Sloan, and Dr. Leonard Findlay. Dispensary Surgeons: Dr. Farquhar Macrae, Dr. Alex. MacLennan, Dr. Archd. Young, Dr. M. L. Taylor, Dr. W. W. Christie, and Dr. C. C. Cuthbert. Anæsthetists: Dr. James P. Boyd, Dr. Home Henderson, Dr. Dingwall Kennedy, Dr. John W. Renton, and Dr. J. K. Patrick Dispensary Gynæcologists: Dr. S. Cameron and Dr David Dickie. Extra Dispensary Physicians: Dr. John P. Duncan, Dr. Murray Ross Taylor, Dr. Geo. A. Allan, Dr. Jas. R. C. Greenlees, Dr. G. H. Clark, and Dr. D. R. Kilpatrick. Extra Dispensary Surgeons: Dr. A. H. Edwards, Dr. R. B. Carslaw, Dr Wm. Rankin, and Dr. J. Mill Renton. Extra [illegible] for Diseases of the Ear: Dr. Thomas [illegible] y Surgeon for Disease [illegible] Honorary Consulting O[illegible] Dispensary Surgeon fo[illegible] Dr. J. Walker Downie. [illegible] Consulting Physician for Mental Disorders: Dr. L. R. Oswald. Consulting Medical Electrician: Dr. D. J. [illegible] V.O. Medical Electricians: Dr. J. G. [illegible] Archd. Hay, and Dr. W. F. Somerville. [illegible] Robert Muir. Assistant Pathologists: [illegible] nd Dr. Leonard Findlay. Vaccinator: Dr. J. W. Nicol. Dental Surgeon: Mr. W. D. Woodburn, L.D.S. Superintendent: Dr. Donald J. Mackintosh, M.V.O. Matron: Miss H. Gregory Smith. Secretary and Treasurer: Henry Johnston, 87, Union-street. Assistant Secretary: J. Matheson Johnston, C.A.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—The Hospital at Garnethill was opened in December, 1882, and in June, 1903, a country branch consisting of two wards was opened at Drumchapel. The number of beds in the town hospital and country branch together is 100. A specially designed Dispensary, or Out-patient Department, was opened in October, 1888, in West Graham-street. A central site close to the University has been secured and a hospital of at least 200 beds to take the place of the one in Garnethill will be erected thereon shortly. The whole institution is for non-infectious cases and is available to medical students for clinical instruction in the diseases peculiar to childhood. Classes are formed both at Hospital and Dispensary at the beginning of the University session in October. Students may be enrolled at any time. Fee £1 1*s*. per annum, admitting to both Hospital and Dispensary. Further particulars on applying to the House Surgeon, 45, Scott-street, Garnethill, Glasgow. Physicians: Dr. Samson Gemmell and Dr. George S. Middleton. Surgeons: Mr. T. Kennedy Dalziel and Mr. R. H. Parry.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (29 beds and six cots).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 1053; out- or dispensary patients, 10,306. Operations on [illegible] Honorary Consulting Surgeon: [illegible] Dr. A. Maitland Ramsay. As[illegible] Rowan, Dr. H. Wright Thoms[illegible] Pathologist: Dr. Mary Hannay. Bacteriologist: Dr. J. Campbell McClure. Electrician: Dr. John Gilchrist. Anæsthetist: Dr. R. H. Henderson. House Surgeon: Dr. John Fotheringham. This institution is the Ophthalmic Department of the Royal Infirmary. A post-graduate course is given by Dr. Ramsay and assistants during September. Clinical instruction is given in the summer session to students of the *University and Queen Margaret College* and in winter to students of St. Mungo's College and to all who take the class.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 22,291·3, and the total number of cases in 1908 was 25,570.

Gentlemen may attend as students on payment to the treasurer of the following fees:—For six months £1 1*s*., 12 months £2 2*s*. All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. Students may be allowed the use of the journals and case-books for examination on applying to the House Surgeon. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in [illegible] for graduation in medicine. Secretary and [illegible] Harold John Black, 88, West Regent-[illegible] The medical session opens in October. [illegible] taff is as follows:—Surgeons: Dr. Thomas S. Meighan, Dr. A. Freeland Fergus, Dr.

Andrew Wilson, Dr. James Hinshelwood, Dr. Leslie Buchanan, and Dr. W. Ernest F. Thomson. Assistant Surgeons: Dr. A. Lewis M'Millan, Dr. Henry L. G. Leask, Dr. W. Cochrane Murray, Dr. Brownlow Riddell, Dr. Arthur J. Ballantyne, and Dr. Arthur Vost. Pathologist: Dr. M. Logan Taylor. House Surgeon: Dr. Jas. D. Kidd. Assistant House Surgeon: Dr. Wm. H. Manson.

UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE, ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE).

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 45 (St. Andrews, No. 4) of the Commissioners under the Universities (Scotland) Act, 1889. These regulations came into force on April 19th, 1897. Four degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and a Diploma in Public Health. The whole curriculum may be taken at University College, Dundee, or the first two years of the course may be taken at St. Andrews and the remaining three years in Dundee. The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical studies each student shall pass a Preliminary Examination in (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects:—(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other Modern Language, (ϛ) Logic. A degree in Arts or in Science in any of the Universities of the United Kingdom and in some colonial or foreign universities shall exempt from the Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the Final Examination for the Diploma of L.L.A.

Degree of Bachelor of Medicine and Bachelor of Surgery.—Candidates must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine, and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery, Operative Surgery, Vaccination, Children's Diseases, Fevers, Ophthalmology, and Post-mortem Examinations.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., first, in Botany, Zoology, Physics, and Chemistry; second, in Anatomy, Physiology, and Materia Medica; third, in Pathology, and Forensic Medicine and Public Health; and fourth, in Surgery, Clinical and Operative Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and Gynæcology (Systematic and Clinical).

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of Doctor of Medicine shall be 10 guineas, exclusive of any stamp duty which for the time may be demanded. The fee to be paid for the degree of Master of Surgery shall be 10 guineas.

The whole medical curriculum can be taken in University College or the first two years in United College.

Bursaries, United College, St. Andrews.—Fourteen Taylour Thomson Bursaries for female Medical students of the annual value of from £20 to £30 each, tenable for one or two years. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination and who are prepared to take two Anni Medici at the United College, St. Andrews.

University College, Dundee.—(*a*) Open to either sex. Eleven Entrance Bursaries of £15, tenable for one year. (*b*) Open to either sex: Four £20 and three £15, second year. (*c*) Four £20 and two £15, third year. (*d*) Two £20, fourth year. (*e*) Two £20, fifth year. (*f*) Bute Bursary, founded in 1893 by the late Most Honourable the Marquis of Bute, K.T. This Bursary consists of the free proceeds of £1000. (*g*) Two Bursaries of the annual value of £25, tenable for three years at either University College, Dundee, or at any Scottish University (local candidates only).

Professors—Natural Philosophy: William Peddie, D.Sc., F.R.S.E. Chemistry: Hugh Marshall, D.Sc., F.R.S. Edin. Natural History: D'Arcy W. Thompson, M.A., C.B. Botany: Patrick Geddes, F.R.S.E. Anatomy: J. Yule Mackay, M.D., LL.D Physiology: E. W. Reid, B.A., D.Sc., M.B., M.R.C.S., F.R.S. Pathology: L. R. Sutherland, M.B., C.M. Surgery: D. MacEwan, M.D. Medicine: Alexander M. Stalker, M.A., M.D. Midwifery: J. A. C. Kynoch, M.B., F.R.C.P. Edin. Materia Medica: C. R. Marshall, M.A., M.D.

United College of St. Salvator and St. Leonard.—Professors—Natural Philosophy: A. S. Butler, M.A. Natural History: W. C. MacIntosh, M.D., LL.D., F.R.S. Chemistry: James C. Irvine, D.Sc., Ph.D. Anatomy: James Musgrove, M.D., C.M. Physiology: Percy T. Herring, M.D.

For further particulars apply to Professor Kynoch, Dean of the Medical Faculty, University College, Dundee.

University College, Dundee.—This College is one of the constituent colleges of the University of St. Andrews. In the new medical buildings there are spacious and well-equipped laboratories and work-rooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynæcology. The complete medical curriculum can be taken in Dundee. For classes, fees, &c., see under University of St. Andrews.

Royal Infirmary, Dundee.—The Infirmary contains 400 beds, including special wards for the Diseases of Women, Children, Eye, Ear and Throat, Skin, and Obstetric cases.

There is in addition an Extern Obstetric Department. There were during last year 20,543 out-patients and 7281 home patients. The *Royal Infirmary* [illegible] practical work to students. [illegible] Resident Medical Assistants [illegible] and one non-resident Obstetric Assistant. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological Department. There are in connexion with the clinical courses Tutorial Classes in Medicine and Surgery. Instruction is also given in Practical Pharmacy and Materia Medica and in Practical Dentistry. Further information can be obtained from Dr. Fraser, Medical Superintendent.

ROYAL and DISTRICT ASYLUMS, Dundee (five miles from City). Number of patients, 490.—Physician Superintendent: Dr. William Tuach-Mackenzie. Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrews), are given during the Summer Session at University College and at the Royal and District Asylums by Dr. Tuach-Mackenzie. The course consists of 12 Lectures and 14 Clinical Lectures and Demonstrations. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants.

UNIVERSITY OF ABERDEEN.

The Univer[illegible] degrees in Medicine and Sur[illegible] M.D.), Master of Surgery [illegible] (M.B.), and Bachelor of S[illegible]s of M.B. and Ch.B. are not conferred separately and the higher degrees of M.D. and Ch.M. *are only granted to holders of the M.B. and* Ch.B. degrees.

Degrees of M.B. and Ch.B.—Before commencing his medical studies each student must pass a Preliminary Examination in (1) English, (2) Latin, (3) Mathematics, and (4) Greek, or French, or German. In the case of a candidate whose native language is not English an examination in the [illegible] in Fre[illegible] classic[illegible] culum for the degrees extend over a period of five years, during which attendance is required in the following subjects: Botany, Zoology, Physics, Chemistry (Systematic and Practical), Anatomy (Systematic and Practical), Physiology (Systematic and Practical), Materia Medica and Therapeutics, Practical Pharmacy, Pathology (Systematic and Practical), Medical Jurisprudence and Public Health, Surgery, Medicine, and Midwifery.

Candidates must attend for at least three years the medical and surgical practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons, and they must have attended courses of at least nine months in clinical medicine and clinical surgery. The candidate must have acted as clerk in the medical and dresser in the surgical wards of a hospital and must have attended for at least six months the practice of a dispensary or the out-practice of a hospital, &c. Attendance is also required on courses in Mental Diseases, Fevers, Ophthalmology, Post-mortem Examinations, and other special subjects. The candidate is also required to have been properly instructed in Vaccination and to have attended at least 12 Midwifery cases.

Professional Examinations are held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fee for the degrees of M.B. and Ch.B. amounts to £23 2*s*. Matriculation fee for the winter and summer sessions, £1 1*s*.; summer session alone, 10*s*. 6*d*.

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: City Fever Hospital, Sick Children's Hospital, General Dispensary, and Lying-in and Vaccine Institutions (daily), Royal Lunatic Asylum, Ophthalmic Institution, &c.

Degrees of M.D. and Ch.M.—Candidates for either of these degrees must already hold the degrees of M.B. and Ch.B. of Aberdeen. A thesis has to be presented for approval by the Medical Faculty and an examination has to be passed in Clinical Medicine or Clinical Surgery as the case may be. Fee for each of the degrees £10 10*s*.

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

Professors—Natural Philosophy: C. Niven, M.A., F.R.S. Physiology: J. A. MacWilliam, M.D. Medicine: David White Finlay, M.D. Chemistry: F. R. Japp, LL.D., F.R.S. Anatomy: R. W. Reid, M.D., F.R.C.S. Surgery: (vacant). Materia Medica: J. T. Cash, M.D., F.R.S. Midwifery: W. Stephenson, M.D. Forensic Medicine: Matthew Hay, M.D. Botany: J. W. H. Trail, M.D., F.R.S. Pathology: Geo. Dean, M.B. Natural History: J. Arthur Thomson, M.A.

Scholarships and Prizes.—In the Faculty of Medicine of the University of Aberdeen there are the following Bursaries, Scholarships, and Prizes:—Bursaries: about 15 Bursaries (competition and presentation) are open each year, of £15 to £20 per annum in value, most of them being tenable for three years; certain other Bursaries are not confined to the Faculty of Medicine, but may be held by Arts Students. Scholarships: five Post-Graduate Scholarships, value £36 to £160 per annum. Prizes and Medals: 13 Gold Medals and Prizes for proficiency in special departments, &c.

Clinical Instruction.—ABERDEEN ROYAL INFIRMARY.—Contains 251 beds. Consulting Physician: Dr. Angus Fraser. Physicians: Professor Finlay, Dr. George M. Edmond, and Dr. Ashley W. Mackintosh. Assistant Physicians: Dr. A. H. Lister, Dr. W. R. Pirie, and Dr. Thos. Fraser. C[illegible] [illegible]xander Ogston, Dr. J. C. [illegible] h. Surgeons: Mr. J. S. [illegible] Mr. H. M. W. Gray. A[illegible] Milne, Dr. Henry Pe[illegible] Ophthalmic Surgeon: Dr. C. H Usher. Assistant Ophthalmic Surgeon: Dr. W. Clark Souter. Gynæcologist: Professor W. Stephenson. Pathologist: Professor George Dean. Assistant Pathologist: Dr. G. M. Duncan. Dental Surgeon: Dr. J. M. P. Crombie. *Anæsthetist: Dr. J. J. Y. Dalgarno.* Assistant Anæsthetists: Dr. Alex. Mitchell and Dr. A. W. Falconer. Medical Electrician: Dr. J. R. Levack. Assistant Medical Electrician: Dr. Clifford T. Bell. Dermatologist and Lecturer on Diseases of the Skin: Dr. J. F. Christie. [illegible]cal Registrar: Dr. William [illegible] nd Factor for the Hospital [illegible] Union-street, Aberdeen.

ABERDEEN ROYAL LUNATIC ASYLUM.—*Contains*, with hospital attached to main institution and agricultural branch, about 986 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. Arthur Kellas, Dr. Kenneth Ross, and Dr. James Laing. Clerk, Treasurer, and Factor: Mr. A. Scott Finnie, 343, Union-street, Aberdeen. Clinical instruction is given to students during three months in summer.

SCOTTISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colle[illegible] by which, after one series of [illegible] or Glasgow, or both, the s[illegible] of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess [illegible] cine or Surgery. Copies of the [illegible] Licence of any of the Bodies [illegible] to the respective secretaries.

Professional Education—I. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of [illegible] Physics, three months; Elementary Biology, [illegible] months; Practical or [illegible]; Anatomy, during at [illegible], twelve months; Physi[illegible]dica, three months; [illegible]hology), six months; [illegible] Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery and the Diseases of Women and Children, three months; Medical

Jurisprudence and Public Health, three months. The number of lectures certified as attended at any school not situated in Scotland should not be less than three-fourths of the total number of lectures delivered in a course. II. The candidate must also produce the following certificates :—(*a*) Of having personally attended not less than six cases of labour, or alternatively attendance on 12 cases of labour, at least five of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner, but the practical midwifery applicable to students commencing medical study on and after Oct. 1st, 1908, is as follows: 1. Every student before commencing the study of Practical Midwifery shall have attended a course of lectures on Surgery and Midwifery and be required to have held the offices of Clinical Medical Clerk and Surgical Dresser. 2. Every student shall be required either—(1) to have attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months to the satisfaction of the medical officer in charge, and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 12 cases of labour under official medical supervision; or (2) to have conducted not less than 12 cases of labour, subject to the following conditions—That he has during one month given regular daily attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital or Poor-law infirmary recognised for that purpose by any of the licensing bodies, and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital or infirmary, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision. 3. No certificate that the student has conducted the above-mentioned 12 cases of labour shall be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital or of a dispensary having an obstetric staff recognised for that purpose by any of the licensing bodies or of a Poor-law infirmary having a resident medical officer so recognised. (*b*) Of having attended, for two and a half months, instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for 27 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. Evidence must be produced that the candidate has acted as Surgical Dresser and Medical Clinical Clerk for not less than three months in the wards in each case, and has received practical instruction in administration of anæsthetics. (*d*) Of having attended for six months the practice of a public dispensary specially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second examinations. (*e*) Of having been instructed in the Theory and Practice of Vaccination by a Public Vaccinator authorised by the Local Government Board to grant certificates of proficiency in vaccination and of having performed operations under the teacher's inspection during a period of not less than six weeks.

The above Course of Hospital Practice, and the above Courses of Clinical Medicine and Clinical Surgery shall be attended at a recognised Public General Hospital, possessing distinct staffs of Physicians and of Surgeons, and containing on an average not less than 80 patients available for Clinical Instruction.

In addition to the courses above prescribed candidates are required to attend the following courses: Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months.

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. The period of three years devoted to hospital practice may include clinical instruction in special subjects, and must also include instruction in administration of anæsthetics and attendance at post-mortem examinations. The student's regularity of attendance in the wards and out-patients' departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Students are recommended to pay particular attention to practical work in connexion with all the departments of study, and to avail themselves of opportunities of acquiring practical acquaintance with special departments of Clinical Study, such as Diseases of the Ear, Throat, and Skin, Diseases of Children, and Operative Surgery. The examinations shall be so conducted as to test practical knowledge.

Candidates shall be subjected to four professional examinations:

First Examination.—The First examination shall embrace the following subjects—(1) Physics, (2) Chemistry, including Practical Chemistry, and (3) Elementary Biology. The fees payable for admission to the First examination shall be for the whole examination, £5; for each subject separately, £3; and for re-entry, £2 10*s*.

Second Examination.—The Second examination shall embrace Anatomy and Physiology including Histology; and candidates may be admitted to this examination at the end of the second year of medical study. The fees payable for admission to the Second examination shall be—for the whole examination, £5, and for re-entry after rejection, £3 for both subjects, and for each of the subjects separately, £3, and for re-entry for each subject after rejection, £2.

Third Examination.—The Third examination shall embrace Pathology and Materia Medica with Pharmacy. The fees payable for admission to the Third examination shall be—for the whole examination, £5; for re-entry in both subjects after rejection, £3; and for each of the subjects separately, £3, and for re-entry for each subject after rejection, £2.

Final Examination.—The Final examination shall not be taken earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women and of New-born Children; and Medical Jurisprudence and Public Health, but *it is optional* to candidates who have passed the Third Examination to be admitted to each of the subjects of the Final Examination on lodging certificates of having attended the necessary course or courses in that subject—viz., in Medical Jurisprudence and Public Health at any time; in Medicine and Surgery and Midwifery, at any time after the end of the fifth Winter Session, provided the Final Examination is completed within 15 months of passing any one of the three latter subjects. All candidates shall be subjected, in addition to the written and oral examinations, to clinical examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c. The fees payable for the Final examination shall be,—for the whole examination, £15, for re-entry in all subjects after rejection, £5, and for each of the subjects separately, £5, with £3 for re-entry in each subject.

Candidates who enter on the footing of having passed the earlier examination at another Board shall pay the fees in respect of these examinations, as well as the Final examination fees.

There are six periods of examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespectively of the place of the previous examination. The Registrar in Edinburgh is Mr. J. Robertson, solicitor, 54, George-square; and the Registrar in Glasgow, Mr. A. Duncan, LL.D., 242, St. Vincent-street, to whom fees and certificates must be sent for the respective examinations.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the Scottish Conjoint Board the Royal College of Physicians grants honour diplomas which no longer give the right to practise professionally if held separately, and also grants its Single Licence to candidates already possessing legal qualifications for professional practice.

[illegible] a [illegible] of the College of Physicians or a graduate of a British or Irish University and 24 years of age, is examined in medicine, therapeutics, and in any branch of the departments of medicine, such as general pathology, psychology, public health, obstetrics, tropical medicine, or medical jurisprudence. A candidate who has attained the age of 40 years and has been distinguished for outstanding scientific attainments may be excused any or all of the examination. The fee for the Membership is £36 15*s.*, 15 guineas of which will be returned to any successful candidate who was already a Licentiate of the College at the time of qualifying for the Membership.

Fellowship.—The Fellows are selected, save with rare exceptions, from the ranks of the *Members.* They must be 25 years of age. The fee is £64 18*s.*

The College grants its *Single Licence* on terms similar to those of the Royal College of Surgeons of Edinburgh, as mentioned in the next section.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH: *THE FELLOWSHIP.*

The Royal College of Surgeons of Edinburgh grants a diploma of Fellowship after examination to the holders of the surgical degrees of diplomas of such British examining bodies, as well as of the holders of such surgical degrees of the Universities of Canada, Australia, New Zealand, and the Indian Empire as are recognised by the College. The candidates for the examination must be 25 years of age and must have been engaged in practice for at least two years. The examination is of a practical nature, partly written and partly *viva voce*, and must include surgery and surgical anatomy, operative surgery, and clinical practice. One optional subject must also be taken, the range of these specialisms covering nearly every branch of medicine. The fee to be paid on entering for examination for Fellowship is £45, £15 of which is remitted to those who already hold the Licentiateship of the College. Candidates rejected at the examination obtain repayment of fee less £10 retained for examination expenses. One month's notice of intention to present himself for examination must be given by the candidate to Mr. D. L. Eadie, 54, George-square, Edinburgh, clerk to the College, together with credentials signed by two Fellows of the College, one of whom must be a resident in Edinburgh, unless a special application be made to the President and the Council of the College. In exceptional circumstances registered medical practitioners who have distinguished themselves in the practice of their profession are admitted to the Fellowship without examination.

The Royal College of Surgeons of Edinburgh admits to the examination for its Single Licence any candidate who already holds a Diploma in Medicine of any British, Indian, or Colonial university or of any British or Colonial College of Physicians, or of the Society of Apothecaries of London or Apothecaries' Hall, Dublin, granted under the provisions of the Medical Act, 1886, whose preliminary examination and course of professional study is proved to be sufficient to fulfil the requirements of the College, or to those who have passed a full examination for any of the above. Female practitioners are now admitted to the Licence of the College but not to the Fellowship, and the regulations for the [illegible] to practitioners of either sex.

[illegible] ma must have followed [illegible] or in an established [illegible] or in a provincial school specially [illegible] s of that division of the [illegible] e.

[illegible] ol of Medicine are comprehended the medical schools of those cities of Great Britain and Ireland in which Diplomas in Surgery are granted, and such colonial and foreign schools as are similarly circumstanced in the countries in which they exist.

SINGLE LICENCE.

Professional Examination for the Diploma of the College.—Candidates for the Diploma of the College will be sub- [illegible] partly in writing and [illegible] ill be presented four [illegible] occasions the candi- [illegible] rs to the questions proposed, and the clinical and oral examinations shall be conducted on the days immediately succeeding.

Unsuccessful candidates will be remitted to their studies for a period to be determined by the judgment of the examiners, but not in any case for less than three months.

The examination will embrace the principles and practice of surgery (including operative surgery and surgical pathology), clinical surgery, and surgical anatomy, and will not take place before the termination of the full period of study.

Applications for examination must be made to Mr. D. L. Eadie, *not later than one week prior to the date of* examination.

On the production of the required documents Mr. Eadie will *give the candidate an order* authorising the examiners to admit him to examination.

The fee of £15 15*s.* payable to the College must be lodged in the hands of Mr. Eadie not later than one week preceding the examination day. The sum of £10 10*s.* will be returned to each unsuccessful candidate. Under special circumstances candidates can be examined on days other than those fixed by the regulations. The fee for a special examination is as follows, viz., £20 for examination, of which £10 will be returned to candidates remitted on examination.

In order to test more effectually the practical knowledge of candidates recent dissections and anatomical specimens will be employed during examination. They will also be subjected to a practical clinical examination in the Surgical Hospital, including the application of surgical apparatus, bandages, surface markings, &c., and may, if it be considered necessary to test their knowledge, be required to perform operations on the dead body.

THE FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Like the preceding corporations, the Faculty of Physicians and *Surgeons of Glasgow grants a Fellowship and a Licence* to be held as separate qualifications.

Fellowship.—The Fellowship of the Faculty is granted *after examination in medicine or surgery, together with an* optional subject, which may be anatomy or physiology or be selected from any special branch of medicine or surgery, and *14 days' notice must be given by the candidate of his* intention to present himself to Mr. Alexander Duncan, LL.D., the Faculty Hall, Glasgow. The fee for the Fellow*ship is* £30, £10 *of which sum are returned to any successful* candidate who already holds the Licence of the Faculty. An additional sum of £20 is required in the case of candidates resident within *seven miles of Glasgow.* In certain circumstances Fellows may be elected as a mark of distinction.

Licence.—The Licence of the Faculty is granted as a separate qualification [illegible] in Medicine after examination in [illegible] anatomy and clinical surgery.

SCOTTISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

The hospitals which are recognised by the Scottish Conjoint Boards, as places where professional study for their diplomas can be pursued are all those institutions which feed the medical faculties of the universities. In addition the Scottish Boards recognise all the places which are recognised by the English Conjoint Board (*see* p. 632) and the Irish Conjoint Board (see p. 654).

III.—IRELAND.

THE UNIVERSITIES.

It is impossible for us to present a complete survey of medical education in the Irish Universities, as they have not yet emerged from the state of transition following upon the passing of Mr. Birrell's Universities Act of 1908 for their *reformation.* It will be remembered that under that Act the old Royal University of Ireland, which is a purely examining body having its headquarters in Dublin and affiliated colleges in Belfast, Galway, and Cork, is in process of dissolution, and in fact is now in its last days. It is to be superseded by two new universities—namely, the University of Belfast and the

National University of Ireland, the latter having headquarters at Dublin, with the old Queen's Colleges at Cork and Galway as its other constituent colleges. The Cecilia-street Catholic School of Medicine will be affiliated to the Dublin College of the National University and will receive a substantial subsidy under the Act for new buildings and equipment. Under the National University the students of the University Colleges of Cork and Galway will be examined by some of their own professors assisted by an extern board from the headquarters in Dublin. The Medical Faculty of the new University of Belfast (to which status Queen's College, Belfast (R.U.I.), has been raised) has completed its revision of the medical curriculum and chosen its teaching staff, and we print below full information on these heads. We understand, however, that the professoriate of the National University of Ireland will not be chosen until October and that the Board of Studies will not set to work to revise the curriculum of the old colleges which form its medical nucleus until a later date. The only University regulations for the granting of Medical Degrees in Ireland now available besides those already rehearsed are those of the rapidly expiring Royal University of Ireland, which we summarised in our last Students' Number (THE LANCET, August 29th, 1908, p. 617). We may anticipate that considerable modifications will be made in the course of study of the medical faculty in the National University of Ireland from those in force in the Royal University. At the same time, it seems probable that no great changes from the old regime can be made during the approaching Winter Session without a disturbance of studies so inconvenient as to be almost impracticable. We will therefore refer those who intend to enter the medical faculty of the new University to a study of the regulations of the Royal University for their present approximate guidance, and would add that the Secretary of the University Commissioners, at the University Buildings, Dublin, might be willing to supply information on any special point of difficulty.

The first of the Irish Universities to fall under notice, by right of seniority, is Trinity College, Dublin, the only one untouched by the recent Act of Reform.

UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

Matriculation.—All students in the School of Physic intending to practise Physic must pass a matriculation examination. This may be either the Public Entrance of Trinity College and a Junior Freshman Term or a special Medical Preliminary, or, for Extern Students, an examination recognised by the General Medical Council. No student can be admitted for the winter course after Nov. 25th.

Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be concurrent with the medical course and the B.A. degree need not be taken before the final medical examinations, but the medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Descriptive and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics, Physiology and Practical Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Dublin Hospital (see p. 654) (two years at a recognised London or Edinburgh hospital before the commencement of the Dublin curriculum may be counted as one year spent in such Dublin hospital); (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months; (5) Practical Midwifery with Clinical Lectures, including not less than 30 cases, six months; (6) Ophthalmic Surgery, three months. Three groups of examinations have to be passed. Preliminary Scientific Examination, including Physics and Chemistry, Botany, and Zoology. The Intermediate Medical Part I., including Anatomy and Institutes of Medicine (Practical Histology and Physiology). The Intermediate Medical Part II., including Applied Anatomy and Applied Physiology; and the Final Examination, which is divided into Part I., Materia Medica, Jurisprudence, and Pathology; and Part II., Medicine, Surgery, Midwifery, Gynæcology, Clinical Medicine, Mental Diseases, Clinical Surgery, Operations, and Clinical Ophthalmology. Part I. may be passed in the fourth year and Part II. in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

Doctor in Medicine.—A Doctor in Medicine must have passed all the qualifying examinations and must be a B.A. of three years' standing. He must also read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

Master in Surgery.—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects: 1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

Master in Obstetric Science.—A Master in Obstetric Science must be fully qualified and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery. He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

University Diplomas.—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees. A diploma in Medicine, Surgery, and Midwifery is a registrable qualification conferred upon candidates who have completed a full five years' course in Medicine and two years in Arts. The diploma, like the degree, qualifies for registration. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

Professors and Lecturers.—Natural Philosophy: F. Purser, M.A. Anatomy and Surgery: A. F. Dixon, D.Sc., M.B. University Anatomist: Sir C. B. Ball, M.D., M.Ch. Physic (Regius): James Little, M.D. Surgery (Regius): Sir C. B. Ball, M.Ch. Surgery: E. H. Taylor, M.D. Botany: H. H. Dixon, D.Sc. Physics: W. E. Thrift, F.T.C.D. Pathology: A. C. O'Sullivan, M.D., F.T.C.D. Institutes of Medicine: W. H. Thompson, M.D., D.Sc. Medicine: J. Magee Finny, M.D. Materia Medica: W. G. Smith, M.D. Midwifery: T. H. Wilson, F.R.C.P. (locum tenens). Jurisprudence and Hygiene: H. T. Bewley, M.D. Chemistry: Sidney Young, D.Sc. Comparative Anatomy and Zoology: H. W. Mackintosh, M.A.

Clinical instruction.—The hospital facilities for clinical instruction available in Dublin will be described below.

QUEEN'S UNIVERSITY OF BELFAST.

Although the new University which replaces Queen's College, Belfast, is not yet formally established, the arrangements of the Medical Faculty are complete, and as the old curriculum has undergone thorough revision and extension we give the new regulations at some length.

1. There are six degrees in the Faculty of Medicine of the University—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), and Master of Obstetrics (M.A.O.). The University also grants a Diploma

in Public Health, particulars of which will be found on p. 667. 2. The degrees of M.B., B.Ch., and B.A.O. are the primary degrees in the Faculty of Medicine, and are conferred at the same time and after the same course of study. No student is admitted to the final examination for these degrees until he has shown: (1) that he is a matriculated student of the University; (2) that he has completed the prescribed course of study in the Faculty of Medicine extending over a period of not less than five academic years from the date of his registration as a student of Medicine by the General Council of Medical Education and Registration of the United Kingdom; (3) that he has passed the several examinations prescribed; (4) that he has attended in the University during three academic years at least the courses of study prescribed for such degrees (the Senate may accept, for not more than two academic years of the required five, courses of study pursued in any other University or School of Medicine approved by the Senate); and (5) that he has attained the age of 21 years. Every candidate for admission as a matriculated student of the University shall pass such Matriculation Examination or fulfil such other test of fitness as may be prescribed by the Senate, which may prescribe the conditions under which students who have passed the Matriculation or Entrance Examination of any other University or College approved for that purpose (or who have fulfilled such other test of fitness as may be prescribed) may be exempted from passing the Matriculation Examination of the University.

The Matriculation Examination.—Entrants to the University who desire to proceed to a degree in the Faculty of Medicine shall be required to pass in five subjects, to be selected from (1) English; (2) Mathematics; (3) Latin; (4 and 5) any *two* of the following (of which *one* must be a Language)—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Physics, (*e*) Chemistry. There shall be two examinations for Matriculation, one in summer and one in autumn. All the subjects offered by a candidate for Matriculation shall be passed at one examination. Entrants (other than those who are matriculated students of the Royal University of Ireland) who have passed the Senior Grade of the Intermediate Education Board for Ireland in the subjects already prescribed in or after the year 1906 shall, on making formal application to the secretary, be admitted as matriculated students. Two examinations for Matriculation, each covering a period of six days, will be held during 1910. They will commence on Mondays, June 13th and Oct. 3rd. Candidates must lodge their entrance forms, duly filled up, with the Secretary, and pay the prescribed fee of £1 1*s.*, not later than May 13th for the summer examination and not later than Sept. 3rd for the autumn examination, or with a late fee of 10*s.*, not later than 14 days before the examination, after which no entry will be received. Entrance forms may be had after April 4th from the secretary.

Entrance Scholarships.—Candidates who intend to present themselves for the Entrance Scholarships to be awarded in connexion with the June Matriculation Examination must give notice to the secretary of the subjects in which they propose to be examined not later than May 13th, 1910. Information as to the scholarships which will be open for competition and the subjects which may be taken will be issued during the first term of the session 1909–10.

PRIMARY DEGREES OF M.B., B.CH., B.A.O.

All candidates for these degrees shall satisfy the examiners in the subjects of four examinations known as the First, Second, Third, and Fourth Medical Examinations respectively. Two examinations for each of these (Pass and Honours) will be held in the spring and summer.

The First Medical Examination.—The subjects of this examination are Chemistry (Inorganic and Organic), Experimental and Practical Physics, Botany and Zoology, and Practical Botany and Zoology. The examination will be divided into two parts which may be taken separately: I., Chemistry, Practical Chemistry and Experimental Physics (including laboratory work); II., Botany and Zoology (including laboratory work).

The Second Medical Examination.—The subjects are Anatomy and Practical Anatomy, Physiology and Practical Physiology. Candidates who have previously passed the First Medical Examination may present themselves for this examination at the close of their second year.

The Third Medical Examination.—The subjects are: [illegible] Pathology; (2) Materia [illegible] erapeutics; (3) Medical [illegible] Candidates who have pre- [illegible] Examination may present themselves for this examination at the close of the third year. Attendance on a course in any subject of the Third Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the First Medical Examination.

The Fourth Medical Examination.—The subjects are: (1) Medicine; (2) Surgery; (3) Midwifery; (4) Ophthalmology and Otology. This examination may be taken in two parts: I., Systematic; II., Clinical, Practical and Oral. Candidates who have previously passed the Third Examination may present themselves for Part I. of the Fourth Examination at the close of the fourth year, provided that they have fulfilled the necessary requirements as to attendance, &c., on the courses of instruction in the subjects of examination. Candidates who have passed Part I. of this examination may present themselves for Part II. at the close of the fifth year, provided that they have fulfilled the necessary requirements as to hospital attendance on the various clinical courses in the subjects of examination. Parts I. and II. may be taken together at the close of the fifth year. Attendance on a course in any subject of the Fourth Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the Second Medical Examination.

Courses of Study.—Candidates who desire to enter for any of the Medical Examinations must furnish satisfactory certificates of attendance on the various courses dealing with the subjects of the respective examinations.

[illegible]

instruction in the conduct of [illegible]
of a medical officer, to have [illegible]
official medical supervision, [illegible]
20 cases of labour, subject [illegible]
he has during one month gi [illegible]
indoor practice of a Lying-in [illegible] Infirmary having a resident medical
general hospital or Poor-law [illegible]

[illegible]

children's ward of a general hospital recognised by the [illegible]
(7) In Mental Diseases and Infectious Diseases. Every student shall [illegible] courses of instruction. [illegible] having [illegible] a teacher [illegible]

The following order of study and examinations is recommended to students entering under the new Regulations in October, 1909:—

First Year.

Winter Session.—Chemistry, Practical Chemistry, Experimental Physics (including Laboratory work), Anatomy (Elementary), and *Practical Anatomy.*

First Examination, Part I. (fee £1 1*s.*).

Summer Session.—Botany, Zoology, and Practical Botany and Zoology.

First Examination, Part II. (fee £1 1*s.*).

Second Year.

[illegible] Physiology, and [illegible] Demonstrations), [illegible]

Third Year.

Winter Session.—Pathology; Materia Medica, Pharmacology, and Therapeutics; Medical Jurisprudence; and Hospital Practice.

Summer Session.—Practical Pathology, Practical Pharmacy, Hygiene, and Hospital Practice.

Third Examination (fee £1 1s.).

Fourth Year.

Winter Session.—Surgery, Medicine, Midwifery, and Hospital Practice.

Summer Session.—Operative Surgery, Ophthalmology, Vaccination, and Hospital Practice.

The following Hospital courses should be taken during the Fourth or Fifth Year:—Diseases of Children, Mental Diseases, Practical Midwifery and Gynæcology, and Fevers.

Fourth Examination, Part I. (Systematic) (fee £1 1s.).

Fifth Year.

Winte[illegible] Surgery, Clinical Gynæcology, [illegible] Practice.

Summ[illegible]

F[illegible], Practical, and Oral Examinations), fee £1 1s.

Admission to degrees of M.B., B.Ch., and B.A.O.—fee £10 10s.

Modified Courses of Study for Matriculated Students of the Royal University of Ireland.

Students who at the beginning of 1909–10 have already finished one year of medical studies and who have passed the First Medical Examination of the Royal University are recommended to take the following courses, subsequently following the courses of study recommended above.

Winter.—Anatomy and Practical Anatomy, Physiology and Practical Physiology, and Practical Chemistry. Examination in Practical Chemistry.

Summer.—Practical Anatomy, Physiology, and Practical Histology. Examination in Anatomy and Physiology.

Students who at the beginning of 1909–10 have already finished two years of medical study and who have passed the Second Royal University Examination are recommended to follow the same course that they would have done under the old Regulations. If, however, a student should desire to adopt the courses of study prescribed by the Regulations of the University, it would be necessary for him to extend his curriculum to six years, as he would be unable to finish Anatomy and Physiology before the end of the third winter at earliest, and most probably not until the close of the third year. Students who at the beginning of 1909–10 have already finished three or more years of medical study are recommended to follow the same course that they would have done under the old Regulations.

DEGREES OF M.D., M.CH., AND M.A.O.

These degrees shall not be conferred until the expiration of at least three academic years, or in the case of graduates of the University in Arts or Science of at least two academic years, after admission to the primary degrees in the Faculty of Medicine. Every candidate must show that in the interval he has pursued such courses of study, or been engaged in such practical work as may be prescribed. These degrees may be conferred by the Senate either (*a*) after an examination, which includes written, oral, clinical, and practical examinations; or (*b*) on the submission of a thesis or other evidence of original study or research, to be approved by the Faculty of Medicine after an oral or other examination of the candidate on the subject thereof. On application for these degrees a fee of £2 2s., and on admission to them a fee of £2 2s., must be paid.

The subjects of the examination for the degree of M.D. are:—The Principles and Practice of Medicine, and one other special subject to be selected by the candidate from: (i.) Human Anatomy, including Embryology; (ii.) Physiology; (iii.) Pathology; (iv.) Pharmacology and Therapeutics; (v.) Sanitary Science and Public Health; (vi.) Forensic Medicine and Toxicology.

The subjects of the examination for the degree of M.Ch. are:—(1) Surgery, Theoretical and Practical, including Ophthalmology and Otology. (2) Surgical Pathology. (3) Surgical Anatomy and Operative Surgery, with the use of surgical instruments and appliances.

The subjects of the examination for the degree of M.A.O. are:—(1) Midwifery. (2) Diseases of Women and Children. (3) Pathology in its special bearing on Midwifery, and Diseases of Women and Children.

Scholarships.—Ten Junior Scholarships have been founded in the Faculty of Medicine of the annual value of £20 each. Two are tenable by matriculated students of the first, second, third, fourth, and fifth years of their course respectively. The examinations for scholarships take place at the commencement of the session. A Travelling Medical Scholarship, value £100, will be awarded in the spring of 1900. Class prizes are awarded at examinations which take place at the close of the session.

The Medical School.—The Donald Currie Chemical Buildings contain a lecture theatre, a preparation room, a chemical museum, a large class-room for elementary practical chemistry, laboratories for qualitative and quantitative analysis, rooms for water and gas analysis, dark room for photographic purposes, balance room, &c., provided with all modern appliances. Special facilities are given to those who wish to pursue original research. The Anatomical Department contains a large and well-lighted dissecting-room, a lecture-room, a professor's and demonstrator's room, a bone-room, and a laboratory for microscopic and photographic work. The Medical Museum is in the same building. The Jaffé Laboratories for Physiology comprise a lecture theatre, laboratories for practical work in chemical physiology, histology, and experimental physiology, and in addition small private research rooms, including balance, galvanometer, and centrifuge rooms. The Musgrave Pathological Laboratory.—In this department opportunity is afforded for research in pathology and bacteriology. The department is in touch with most of the hospitals in Belfast, and there is an ample supply of material for investigation by graduates in morbid histology, clinical pathology, and the bacteriology of infectious diseases. A course in pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in the department for the Public Health Committee of the corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, the diagnosis of cases of infectious diseases, &c. The certificate issued to members of the class in bacteriology qualifies for the D.P.H. degree. The Pharmaceutical Laboratory is fitted and equipped for the work of practically instructing students in the compounding and dispensing of medicines.

The Teaching Staff of the Faculty of Medicine.—Professors—Natural Philosophy: W. Blair Morton, M.A. Chemistry: E. A. Letts, Ph.D., D.Sc. Zoology: Gregg Wilson, M.A., D.Sc. Botany: D. T. Gwynne-Vaughan, M.A. Anatomy: J. Symington, M.D., F.R.S. Physiology (Dunville Professor): T. H. Milroy, M.D., B.Sc. Materia Medica: Sir William Whitla, M.A., M.D. Pathology (Musgrave Professor): W. St. Clair Symmers, M.B. Medicine: J. A. Lindsay, M.A., M.D., F.R.C.P. Lond. Surgery: T. Sinclair, M.D., M.Ch., F.R.C.S. Eng. Midwifery: Sir John Byers, M.A., M.D., M.Ch., M.A.O. Lecturers—Medical Jurisprudence: W. St.C. Symmers, M.B., and T. Houston, M.D. Ophthalmology and Otology: E. Shaw, M.D., M.Ch. Hygiene: W. J. Wilson, M.D., D.P.H. Bio-Chemistry: J. A. Milroy, M.D. Physics: R. Jack, D.Sc. Organic Chemistry: A. W. Stewart, D.Sc. Vaccination: J. M'Liesh, M.B., D.P.H. Assistants and Demonstrators—Anatomy: J. S. Dickey, M.B., R. Hill, M.B., and H. H. B. Cunningham, M.D. Applied Anatomy: P. T. Crymble, M.B., F.R.C.S. Eng. Physiology: J. A. Milroy, M.A., M.D. Practical Pharmacy: V. G. L. Fielden, M.B., Ph.C. Riddel Demonstrator in Pathology and Bacteriology: W. J. Wilson, M.D., D.P.H. Pathological Neurology: W. J. Maguire, M.D., D.P.H. Clinical Pathology: T. Houston, M.D. Medicine: J. E. MacIlwaine, M.D. Surgery: Mr. Howard Stevenson. Midwifery: Dr. C. G. Lowry.

Clinical instruction.—The following institutions are recognised by the University as affording proper opportunities for clinical instruction: the Royal Victoria Hospital, the Belfast Mater Infirmorum Hospital, the Union Hospitals, the Belfast Hospital for Sick Children, the Belfast Maternity, the Ulster Hospital for Women and Children, the Ulster Eye, Ear, and Throat Hospital, the Belfast Ophthalmic Hospital, the Purdysburn Fever Hospital, and the Belfast District Lunatic Asylum.

The staffs of the various institutions are as follows:—

The Royal Victoria Hospital (300 beds).—Physicians: Professor Sir William Whitla, Professor James A. Lindsay, Dr. William Calwell, and Dr. H. L. McKisack. Surgeons: Mr. J. Walton Browne, Professor T. Sinclair, Mr. A. B. Mitchell, and Mr. T. S. Kirk. Gynæcologist: Professor Sir John Byers. Surgeon for Diseases of the Eye, Ear, and Throat: Mr. James A. Craig. Pathologist: Professor W. St.C. Symmers. Physician for Diseases of the Skin: Dr. W. Calwell. Assistant Physicians: Dr. W. B. McQuitty and Dr. J. S. Morrow. Assistant Surgeons: Mr. Robert

Campbell and Mr. Andrew Fullerton. Assistant to the Gynæcologist: Mr. R. J. Johnstone. Assistant Surgeon to the Eye, Ear, and Throat Department: Mr. Henry Hanna. Assistant to the Pathologist: Dr. C. G. Lowry. Administrators of Anæsthetics: Dr. V. G. L. Fielden, Mr. W. C. M. Burnside, and Mr. Norman Barnett. Medical Electrician: Dr. J. C. Rankin. [illegible] ston. Medical Tutor: Dr. S [illegible] Mr. Howard Stevenson. [illegible] and Dr. S. T. Irwin. [illegible]

Ophthalmic Hospital (30 beds).—Dr. J. W. Browne.

Maternity Hospital (32 beds).—Mr. R. J. Johnstone.

Union Infirmary (260 beds).—Mr. R. Hall and Dr. J. M'Liesh.

Fev [illegible] bb.

Dis [illegible]

Ma [illegible] Dr. W. J. Maguire. Surgeon: Sir Peter R. O'Connell. Gynæcologist: Dr. Alexander Dempsey.

Ulster Hospital for Women and Children (28 beds).—Dr. R. W. Leslie.

Queen-street Hospital for Sick Children (45 beds).—Dr. John M'Caw.

Benn Ulster Eye, Ear, and Throat Hospital (30 beds).—Dr. W. M. Killen.

THE NATIONAL UNIVERSITY OF IRELAND.

The proposed statutes of this new University being still before Parliament the University is not yet in formal being, and, as we have said already, neither the regulations of its medical faculty for the granting of degrees nor the composition of its teaching body are yet arranged. We give, however, such information concerning University College, Dublin, and [illegible] Cork and Galway as will be [illegible] en they have been proclaimed [illegible] y University; and we add suc [illegible] a-street School of Medicine in Dublin as is available and likely to be of service to those who join it after its probable affiliation to the National University.

UNIVERSITY COLLEGE, DUBLIN.—The *personnel* of the professorial and teaching staffs of this College have not yet been made public, but for the purposes of our Student's Guide the following information bearing upon the medical faculty will be useful. The new University College, Dublin, will comprise a new Medical School; in fact, the Cecilia-street Medical School, as far as concerns its professors and students, will almost certainly be absorbed by the new College, of which the past students of Cecilia-street are members under the Charter. The Cecilia-street school will, therefore, probably cease to exist as an independent entity. But the school of the Royal College of Surgeons in Ireland will not be affiliated to the National University but will continue as at present. It may apply for recognition as a recognised College of the University; but the recognition cannot be given without the consent of the University College, Dublin. We discussed at some length, when the scheme for the creation of the National University was first made public, the result that the rivalry of the Medical School of University College, Dublin, might have upon the School of the Royal College of Surgeons in Ireland (which includes Carmichael and Ledwich Schools) and we hope that a fair plan for the adjustment of interests will be forthcoming.

UNIVERSITY COLLEGE,[1] CORK: THE SCHOOL OF MEDICINE.—The building is provided with a very large, well-ventilated dissecting room supplied with electric light, with physiological, toxicological, pathological, and pharmaceutical laboratories, materia medica, anatomical and pathological museums, as well as a collection of surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants and are open to the students in the class of Botany. The Library contains over 45,000 volumes and is open daily during term time to students. The Medical Museum occupies a large room erected at the northern end of the medical buildings. It consists of (1) an anatomical museum and bone-room, occupying the gallery; (2) pathological museum; and (3) materia medica museum. The two latter collections are on the ground floor. There is a large and representative collection [illegible] smoking, and refreshment rooms, kitchen, and lavatory. There is also a ladies' room for the use of female students. The Rugby Football Club shares the Mardyke ground with two other clubs, and there is also a practice ground within the walls of the College. There are also Gaelic football, Association football, cricket, and athletic clubs, the last of these holding a public meeting once in each year in the Mardyke grounds.

Professors.—Natural Philosophy: W. Bergin, M.A. Chemistry: A. E. Dixon, M.D. Anatomy: B. C. A. Windle, M.D. Physiology: D. T. Barry, M.D. Medicine: W. E. Ashley Cummins, M.D. Surgery: C. Yelverton Pearson, F.R.C.S. Materia Medica: John Dundon, M.D. Midwifery: H. Corby, M.D.

Lecturers.—Medical Jurisprudence: Dr. P. T. O'Sullivan. Pathology: Dr. Arthur E. Moore. Ophthalmology and Otology: Dr. Arthur W. Sandford. Hygiene: Mr. Denis D. Donovan. Osteology: Dr. D. P. Fitzgerald. [illegible] John Taylor. Anatomy: [illegible] Chemistry: Dr. E. V. [illegible] earson. Physiology: Dr. [illegible] hysics: Mr. P. Belas.

Terms.—The First Term will commence on Oct. 19th, 1909, and end on Dec. 22nd. The Second Term will commence on Jan. 10th, 1910, and end on March 23rd. The Third Term will commence on April 5th, 1910, and end with the session on June 11th. Lectures in Chemistry, Experimental Physics, and Zoology will commence on Nov. 3rd, 1909. (*Note.*—The Easter Recess for the Medical Faculty includes the Friday and Saturday before Easter and Easter Monday.)

Matriculation Examination.—The General Matriculation Examination will commence on Oct. 19th, 1909, at 9.30 A.M. Candidates for matriculation should send their names to the Registrar at least three days before the commencement of the examination, stating at the same time the faculty or department which they propose to enter. Before being admitted to examination they are required to pay the College fee for the year amounting to 10*s.* This will be returned, on application, to such as fail to pass the examination. No student will receive a certificate of matriculation until he shall have paid the whole of the class fees for the session and commenced attendance on lectures. Students who have been admitted as matriculated students are required to attend before the president and sign the Roll of Matriculated Students. Students who may be candidates for degrees in the Royal University must have passed the Matriculation Examination of that University, and medical students must have passed a preliminary examination recognised by the General Medical Council. Candidates will be examined in Greek or French or German, Latin, History, Geography, English, and Mathematics.

Admission of Medical Students.—Students in the Faculty of Medicine who have passed the First Professional Examination of the Conjoint Examinations of the Royal College of Physicians and the Royal College of Surgeons in Ireland, or of the Royal College of Physicians and Royal College of Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Physicians, London, and Royal College of Surgeons, England, may be admitted to the rank of second year students on making application to the Council and submitting a certificate of having passed the examination. [illegible] Second Professional [illegible] be admitted to the [illegible] who have passed the Third Professional Examination of the Dublin Colleges, or of the Edinburgh Colleges and Glasgow Faculties, may be admitted to the rank of fourth year students.

Class Fees.—The ordinary fee for a course of lectures is £2. For practical anatomy, practical chemistry, practical physiology, a [illegible]

Residence [illegible] mmodation for the residence of [illegible] but every matriculated studen [illegible] reside during the College terms with his parent or guardian, or with some relative or friend to whose care he shall have been committed by his parent or guardian.

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[1] At present the formal title of the College is Queen's College, Cork.

Houses of Residence.—St. Anthony's Hall, adjoining the College, is the property of the Franciscan Order. A number of sets of room, together with recreation and common rooms, are provided for lay students who may desire to live there. For full particulars apply to the Very Rev. Superior, St. Anthony's Hall, Fernhurst-avenue. The Ursuline Convent, Blackrock, will open in October a house of residence, quite separate from their Secondary School, for Catholic women students; separate bedrooms, dining, and recreation rooms will be provided. For terms and details apply to the Rev. Mother Superior, Ursuline Convent, Blackrock, Cork.

Scholarships.—There are eight Junior Scholarships for matriculated students, two being given each year for the first four years of the Curriculum. They are of the value of £25 each, are tenable for one year each, and are awarded on the result of examination at the commencement of each session. They are open to matriculated students of either sex. In the fifth year of the curriculum there are available a Scholarship and an Exhibition—viz., the Blayney Scholarship of the value of £32 for one year and the Senior Exhibition of £30 for one year, which are awarded after examination at the commencement of the session. There are in addition three Exhibitions in Practical Medicine, Surgery, and Midwifery respectively. These are of the value of £15 each and are awarded after examination at the end of the medical session. Seven Senior Scholarships of the value of £40 each are awarded to matriculated students who shall have during three College sessions, of which two at least shall have been attended in Queen's College, Cork, attended such courses of lectures and passed such examinations as shall be prescribed by the Council, and who shall have passed the necessary examinations within five years from the date of matriculation in the College. The Senior Scholarships open to the Faculty of Medicine are appropriated as follows: One to Latin and Greek Languages and Literature; one to English and two Modern Continental Languages; one to Logic, Metaphysics (including History of Philosophy), and Political Economy; one to Civil and Constitutional History, Political Economy, and General Jurisprudence; one to Mathematics and Mathematical Physics; one to Experimental Physics and Chemistry; and one to Biology and Geological Science. Students who have passed the Matriculation Examination of the Royal University and intend to be candidates for Scholarships in Medicine the first year are required to send to the College Council, on or before the first day of the session, an application to be admitted matriculated students of the College on that examination, stating the date at which they passed it. The same requirement applies to students who have passed the First, Second, or Third Professional Examination in Medicine and intend to become candidates for scholarships of the second, third, or fourth year in that Faculty. Three Exhibitions, each of the value of £15, one in Practical Medicine, one in Practical Surgery, and one in Practical Midwifery and Gynæcology, will be offered for competition at the close of the lectures in the Faculty of Medicine, in the session 1909–10, by candidates who have been in attendance on one or more classes in the Faculty of Medicine during the preceding session. Candidates for these exhibitions shall not have exceeded five years since the date of registration as a medical student. A gold medal, presented by the late professor of anatomy and physiology, Dr. J. J. Charles, and called the Charles Gold Medal, is offered for annual competition among students attending the advanced courses of Anatomy and Physiology.

Clinical Instruction.—Students may attend the South Infirmary, Cork North Charitable Infirmary, the Mercy Hospital, the Cork District Lunatic Asylum, the Victoria Hospital for Diseases of Women and Children, the County Lying-in Hospital, the Cork Maternity, the Cork Fever Hospital, the Cork District Hospital, and the Cork Ear, Eye, and Throat Hospital.

South Infirmary and County of Cork General Hospital (100 beds).—Staff: Consulting Physician: Dr. P. J. Cremen. Physicians: Dr. T. O'Sullivan and Mr. Norman I. Townsend. Surgeons: Mr. H. R. Townsend, Mr. T. Gelston Atkins, and Mr. Henry Corby. Ophthalmic Surgeon: Mr. A. W. Sandford. Physicians for Extern Patients: Mr. E. W. Allsom and Dr. E. V. Cantillon. Surgeon for Extern Patients: Mr. R. P. Crosbie. Pathologist: Dr. A. E. Moore. Dentist: Mr. T. C. Butterfield. Honorary Secretary: Mr. N. I. Townsend. Clinical instruction is given daily in the wards. Special instruction on Ophthalmic Surgery and Diseases of Women and Children will be given in the special wards for such cases. Fee for perpetual ticket, £18 18*s.*; for 12 months, £8 8*s.*; for six months, £5 5*s.*; for three months, £3 3*s.* Three resident pupils will be appointed by competitive examination. Clinical prizes will be given by the staff at the close of the session.

Cork North Charitable Infirmary and County and City of Cork General Hospital (100 beds). Staff: Honorary Consulting Surgeon: Dr. N. J. Hobart. Physicians: Mr. D. D. Donovan and Dr. Edward Magner. Surgeons: Mr. Jeremiah Cotter, Mr. C. Y. Pearson, Mr. N. H. Hobart, and Mr. D. J. O'Mahony. Assistant Physician: Mr. R. B. Dalton. Assistant Surgeons: Mr. John Dundon and Mr. Richard P. Byrne. Pathologist: Mr. Denis Murphy. Surgeon Dentist: Mr. William Pericho. Dispensing Chemist: Mr. John Murphy. Honorary Secretary: Mr. R. B. Dalton. Clinical instruction is given daily in the wards by the physicians and surgeons. Special instruction is given to Junior Students on two days weekly. Fee for perpetual ticket, £18 18*s.*; for 12 or nine months, £8 8*s.*; for six months, £5 5*s.*; and for three months, £3 3*s.* Three resident pupils are appointed quarterly by the medical staff. All resident pupils are required to be registered pupils of the Hospital.

Mercy Hospital.—Staff: Consulting Physician: Dr. P. J. Cremen. Consulting Surgeon: Dr. J. Cotter. Consulting Ophthalmic Surgeon: Dr. J. J. McMahon. Physician: Dr. D. J. O'Connor. Surgeons: Mr. J. Giusani and Mr. J. Dundon. Ophthalmic Surgeon: Mr. J. M. Browne. Surgeon Dentist: Mr. H. O'Keeffe. Resident Surgeon: Mr. M. A. Shinkwin. This hospital contains 60 beds for medical and surgical cases. There is also a daily extern for medical and surgical cases, as well as for diseases of the eye, ear, and throat. Honorary Secretary to the Staff: Dr. D. J. O'Connor, 38, South Mall.

Cork District Lunatic Asylum.—Psychological Medicine: A course of Clinical Lectures on Mental Disease and Allied Neuroses will be delivered in the Cork District Lunatic Asylum on Mondays and Thursdays, commencing the first Thursday in February, by the Resident Medical Superintendent. All students wishing to enter for the course are expected to attend at the Asylum at 2.30 P.M. on that day. All information may be had at the Asylum.

Victoria Hospital for Diseases of Women and Children (Infirmary-road).—Staff: Honorary Consulting Surgeon: Dr. N. J. Hobart. Honorary Medical and Surgical Officers: Dr. W. E. Ashley Cummins, Dr. C. Yelverton Pearson, Mr. Philip G. Lee, and Mr. N. H. Hobart. There are 70 beds in this hospital, 40 of which are reserved for children. Clinical instruction on Diseases Peculiar to Childhood will be given. The extern department is open daily at 10 A.M For further particulars apply to Dr. N. H. Hobart, honorary secretary, Medical Staff, 33, South Mall.

County and City of Cork Lying-in Hospital (Erinville, Western-road; founded 1798).—Staff: Honorary Consulting Physicians: Dr. W. E. Ashley Cummins, Dr. Cotter, and Mr. D. D. Donovan. Honorary Obstetric Surgeon: Mr. C. Yelverton Pearson. Physicians: Mr. Norman I. Townsend, Dr. N. H. Hobart, Dr. Lucy E. Smith, and Dr. Daniel J. O'Connor. Assistant Physicians: Dr. P. J. O'Brien and Dr. E. V. Cantillon. This hospital contains 20 beds. Fee for six months' attendance, including clinical lectures, £3 3*s.* For further particulars apply to Norman I. Townsend, honorary assistant secretary to staff.

Cork Maternity (Bachelor's Quay).—Staff: Honorary Consulting Surgeon: Mr. H. Macnaughton-Jones. Consulting Obstetric Physicians: Dr. T. Gelston Atkins, Dr. Henry Corby, and Dr. John Booth. Obstetric Physicians: Dr. Richard Crosbie and Dr. Michael Cagney. Three resident pupils are taken into the Maternity. Poor women are attended at their own homes. About 400 are now annually entered on the Maternity register. Clinical lectures are delivered during the session. There is an extern department for the treatment of women's and children's diseases. Fee for attendance at clinical lectures and certificate, £3 3*s.* For further particulars apply to Dr. Henry Corby, secretary to staff.

Cork Fever Hospital.—Staff: Ordinary Physicians: Dr. T. B. Moriarty and Dr. D. J. Flynn. Extraordinary Physician: Mr. T. Callaghan. Resident Medical Officer and Registrar: Mr. A. G. Sutton. Upwards of 200 cases of various forms of f [illegible] in this hospital. [illegible] tion in Practical [illegible] sary for the Royal University and Colleges of Physicians and Surgeons of Edinburgh.

Cork District Hospital (Douglas-road; 1200 beds).—Staff: Dr. W. E. Ashley Cummins, Dr. J. Giusani, Mr. D. Morrissy, and Mr. James T. O'Connor. This hospital includes special buildings for fever and other infectious diseases (100 beds); for children's diseases (100 beds); and a Lock hospital, the only one in the South of Ireland (80 beds). It affords an extensive field for the study of all classes of diseases, acute and chronic, including special departments for gynæcology and diseases of the skin and nervous system. The physicians and surgeons visit the hospitals every morning at 10 o'clock. Lectures and clinical instruction are given daily in the wards by the physicians and surgeons. Three prizes are given at the end of the session for the best clinical reports—one in Medicine, one in Surgery, and one in Fever. Further particulars may be obtained from Dr. W. E. Ashley Cummins, 17, St. Patrick's-place, honorary secretary, medical staff.

Cork Eye, Ear, and Throat Hospital (Western-road).—Staff: Visiting Surgeon: Dr. Arthur W. Sandford. Consulting Physician: Dr. W. E. Ashley Cummins. Consulting Surgeon: Dr. N. J. Hobart. This hospital is open to students attending the Queen's College and others. Certificates of attendance for three or six months can be obtained. The hospital contains 35 beds. Over 4000 cases are treated during the year. Clinical instruction in the Eastern Department is given to students attending the hospital. A course of Lectures and Demonstrations on Ophthalmic Surgery is delivered during the session. For further information apply to Dr. Arthur Sandford, 13, St. Patrick's-place, Cork.

UNIVERSITY COLLEGE,[2] GALWAY: THE SCHOOL OF MEDICINE.—The College contains well lighted and ventilated dissecting-room and anatomical lecture theatre; physiological, pharmaceutical, chemical, and physical laboratories; anatomical, pathological, gynæcological, and materia medica museums; as well as a large natural history and geological museum and an extensive library in which students can read and from which they can borrow books. There are eight Junior Scholarships in Medicine of the annual value of £25 each. Two are tenable by matriculated students of the first, second, third, and fourth years. The Council has power to award exhibitions for distinguished answering. Sessional Prizes are offered in each subject. Scholarship examinations are held at the commencement and those for Sessional Prizes at the close of each session. The Medical lectures are recognised by the various Licensing Bodies in the United Kingdom. Clinical instruction is given in the Galway Hospital and in the Galway Union and Fever Hospitals. The following constitute the medical staff of the Galway Hospital.—Physicians: Professor Kinkead and Professor Lynham. Surgeons: Professor Pye, Professor Colahan, and Professor Brereton. Gynæcologist: Professor Kinkead. House Surgeon: Dr. Rouse. Instruction at the Galway Union and Fever Hospital is given by Professor Colahan and Dr. McDonogh. There are extensive grounds, a portion of which is occupied by a Botanic Garden and a part is at the disposal of the College Athletic Union. A prospectus containing full information as to courses of lectures, scholarships, and fees for classes can be obtained on application to the Registrar, Queen's College, Galway.

Professors—Natural Philosophy: A. Anderson, LL.D. Chemistry: A. Senier, Ph.D. Natural History: R. J. Anderson, M.D. Anatomy and Physiology: J. P. Pye, M.D., D.Sc. Medicine: J. I. Lynham, M.D. Surgery: W. Westropp Brereton, L.R.C.S.I. Materia Medica: N. W. Colahan, M.D. Midwifery: R. J. Kinkead, M.D.

Galway County Hospital (established 1786; 60 beds).—Medical Officers: Dr. N. W. Colahan, Dr. J. P. Pye, Dr. W. W. Brereton, Dr. R. J. Kinkead, Dr. J. I. Lynham, and Dr. T. Rouse. Clerk: Mr. S. J. Leonard. Patients, 800.

THE CATHOLIC SCHOOL OF MEDICINE, CECILIA STREET, DUBLIN.—*Teaching staff*: Anatomy: Mr. E. P. McLoughlin, assisted by Dr. Fagan, Dr. Keating, and Dr. O'Farrell. Physiology: Dr. D. J. Coffey and Dr. C. Coppinger, emeritus professor. Chemistry: Dr. Hugh Ryan, assisted by Mr. G. Ebrill. Surgery: Mr. J. S. M'Ardle, assisted by Mr. A. J. Blayney. Medicine: Sir Christopher Nixon. Midwifery: Dr. Alfred J. Smith. Pathology: Dr. E. J. McWeeney. Physics: Mr. J. A. M'Clelland. Biology: Dr. George Sigerson. Practical Biology: Dr. Michael Curran. Ophthalmology: Dr. Louis Werner. Sanitary Science: Dr. E. J. McWeeney (temporary). Materia Medica: Dr. M. J. Dempsey. Medical Jurisprudence: Dr. E. J. McWeeney (temporary). Practical Pharmacy: Mr. M. R. Hayes. Elementary Biology: Dr. D. J. Coffey. Elementary Physics: Mr. P. J. Fagan.

Method of teaching.—Every effort is made to give students individual instruction and to bring them as closely as possible into contact with their teachers. With this object in view the larger classes are divided into two sections, a junior and a senior, which are taught separately. This affords the teachers an opportunity of giving the members of their classes a considerable amount of direct assistance, and it obviates the practice of lecturing to beginners and advanced students at the same time. A special introductory course is delivered at the commencement of the winter session. This class is specially designed to simplify the course for those who have never worked at medical subjects before. It embraces an elementary course of osteology, a description of the terms and means used in the study of anatomy, and an explanation of the chief difficulties which a student meets at his first steps in medicine. The certificates of attendance at lectures and practical courses in the school are recognised by the various universities and licensing bodies of the United Kingdom, including Conjoint Colleges of Physicians and Surgeons of England, Ireland, and Scotland for the licences of which students are prepared.

Exhibitions and medals.—I. Two exhibitions, value £12 10*s.* each, will be offered for competition amongst the students who shall have completed the first year of their medical studies, and will entitle their holders to free lectures in the following year at the Medical School, Cecilia-street, to the above amount. One of these exhibitions will be awarded to the candidate who shall be adjudged by the President of University College to be the most distinguished student of his year in University College; the other will be awarded to the candidate who shall be adjudged by the Medical Faculty to be the most distinguished conjoint student of his year in the Medical School, Cecilia-street. II. Two exhibitions of £10 each will be offered for competition among the students who shall have completed the second year of their medical studies and taken out all the courses of that year at the Medical School, Cecilia-street. One of these exhibitions will be awarded to the candidate who shall be adjudged by the Medical Faculty to be the most distinguished student of his year among those who are following the programme of the Royal University; the other will be awarded to the candidate who shall be adjudged by the Medical Faculty to be the most distinguished student of his year among those who are following the programmes of any of the other licensing bodies. III. An exhibition of £12 10*s.* will be offered for competition among the third year's Royal University students who shall have taken out all the courses of the *two* preceding years in the Medical School, Cecilia-street. IV. A "Final Conjoint" exhibition of £12 10*s.* will be offered for competition among the unqualified students of the school who are not following the Royal University curriculum and who shall have taken out all the lectures prescribed for the last *three* years of their respective curricula in the Medical School, Cecilia-street.

In connexion with the Scholarships established by the Bishops of Ireland, and administered by the Catholic Scholarships Committee, the Medical Faculty have established a Scholarship of free lectures in the courses delivered in the Medical School for the Degrees of the Royal University in Medicine, Surgery, and Obstetrics. Students of University College, Dublin, obtaining honours in the First Arts Examination are eligible. Information with regard to the conditions under which the Scholarship is tenable may be obtained from the Very Rev. Dr. Delany, S.J., 86, Stephen's-green, Dublin, or from the Registrar of the Medical School. A large gold medal has been offered for competition by his Grace the Archbishop of Dublin, Chancellor of the University, among the students who shall have completed their medical studies and shall have taken out all the school [illegible] their curricula in [illegible] will be awarded [illegible] by the Medical

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[2] At present the formal title remains Queen's College.

Faculty to be the most distinguished student of his year in the school and deserving of a gold medal. The examination for this medal, which is entirely written, is in the subjects of the Final Qualifying Examination. It will be held in October, and all who have not passed their Final Examination in the preceding June will be eligible. A large Gold Medal will be awarded to the student, if any, who, having taken out all the courses of at least two academical years in the Medical School, Cecilia-street, and taken his primary Medical Degree in the Royal University, with first-class honours, shall be recommended by the Faculty as the most distinguished student of his standing in the school, and deserving of a gold medal.

The Ambrose Birmingham Memorial Prize in Anatomy.—An annual Prize of £7 is offered for competition to students who shall have completed their first two years of medical study in the school. The examination, which will be held in the latter part of October, will be partly written and partly practical. The programme is the same as that prescribed for the Junior Class Medal.

The late Rector of the Medical School, the late Very Rev. Monsignor Molloy, D.Sc., has left an extremely valuable collection of scientific apparatus to the Medical School, and, in addition, a valuable property, the net income from which will provide prizes in Chemistry and Physics, to be competed for by students of the school. Numerous class medals are also, in addition to the above, awarded by examination in the latter half of June.

The school has a medical and scientific society amongst its students. Extensive athletic grounds have been recently acquired by the Medical Faculty at Croydon Park, Fairview, for the use of the students, and are available for the hurling, football, and cricket clubs already established in connexion with the school.

IRISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The College issues its Licences in Medicine and in Midwifery to practitioners whose names appear on the Medical Register of the United Kingdom.

The Licence in Medicine.—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

The Licence in Midwifery.—Candidates must produce certificates of registration. A registered medical practitioner of five years' standing is exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15*s.* Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16*s.* —to be lodged in one sum. (*Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege and will be required to pay the full fee of five guineas for the Licence of Midwifery.*) Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £5 5*s.* Fee for special examination for the Licence to practise Midwifery, £10 10*s.* The examinations for these Licences are held in the week following the first Friday in February, May, and November.

The Membership.—Examinations for Membership are held in January, April, July, and October. The fee for the examination is £21 to Licentiates of the College, or £36 15*s.* to non-Licentiates. Further particulars can be obtained from the Registrar of the Royal College of Physicians of Ireland, Kildare-street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence in Surgery.—Candidates who hold registrable surgical diplomas (including the Licence of the Apothecaries' Companies of London and Dublin granted since October, 1886) are admitted to examination without further evidence of study. Candidates who hold medical qualifications only (including the L.S.A. granted before October, 1886) will be required to produce certificates of two courses of lectures in Anatomy and Dissections, one course of Practical Histology, one course of lectures in Surgery, and one course of Operative Surgery. Candidates are examined in Surgery, Clinical Surgery, Operative Surgery on the subject, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly *vivâ voce*, and partly practical. The fee is £26 5*s.*, of which £5 5*s.* is retained by the College in the case of unsuccessful candidates.

Diploma in Midwifery.—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance of a course os lectures on Midwifery and Diseases of Women and Children in some school recognised by the Council; (*b*) attendance on six months' practice in connexion with a recognised lying-in hospital or dispensary for lying-in women and children; and (*c*) of having conducted at least 30 labour cases. The fee for the examination is £15 15*s.*, of which £5 5*s.* is retained by the College in case the candidate is unsuccessful.

Fellowship Examinations.—A candidate for the Fellowship shall make application to the President and Council to be admitted to examination; and if the Council decide to entertain that application it shall lie on the table for at least a fortnight for consideration before it is put to the Council for approval. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to the application being considered, and the candidate shall then, if approved by the Council, be admitted to the next sessional examination or to a special examination if granted by the Council, at such date as the President may fix. In order that these regulations may be carried out candidates are required to lodge their applications complete with the Registrar at least one month before the date of examination. Sessional Fellowship Examinations commence, so far as arrangements permit, on the third Mondays in February, May, and November. Special examinations may be granted at other times by the Council if they see fit, on sufficient cause being shown, except during the months of August and September. Candidates for the Fellowship Examination are divided into two grades: I., Licentiates or Graduates in Surgery of less than 10 years' standing; II., Licentiates or Graduates in Surgery of more than 10 years' standing. Students not either Licentiates or Graduates in Surgery are permitted to present themselves for the Primary Examination under Grade I.

Grade I.—Candidates are required to pass two examinations—Primary and Final. Candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary Examination are (*a*) Anatomy, including Dissections; and (*b*) Physiology and Histology.

The subjects for the Final Examination are (*a*) Surgery, including Clinical and Operative Surgery; and (*b*) Surgical Pathology.

Grade II.[3]—The subjects for examination are (*a*) Surgical Anatomy; (*b*) Surgery, including Clinical and Operative Surgery; and (*c*) Surgical Pathology.

Fees.—Grade I.:—For Licentiates of the College: for Primary Fxamination, £15 15*s.*; for Final Examination, £10 10*s.* For Licentiates in Surgery of other licensing bodies: for Primary Examination, £26 5*s.*; for Final Examination, £15 15*s.* For Students of the College: for Primary Examination, £5 5*s.*; for Final Examination, £21. For Students of other licensing bodies: for Primary Examination, £10 10*s.*; for Final Examination, £31 10*s.* Grade II.:—Licentiates of the College, £26 5*s.*; Licentiates in Surgery of other licensing bodies, £42; extra fee for Special Examination, £10 10*s.*

In case of rejection £10 10*s.*, in addition to the special fee, if such has been paid, is retained by the College and is not allowed in the fees of re-examination.

A rejected candidate will not be again admitted to examination until after a period of three months.

Further particulars can be obtained from the Registrar of the College, Stephen's-green, West Dublin.

ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS, IRELAND.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence of having before entering on medical studies passed a Preliminary Examination in general education recognised by the Royal Colleges. Each candidate before receiving his diplomas must produce a [illegible] or satisfactory evidence that he [illegible] ars.

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[3] On and after Jan. 1st, 1910, all examinations for the Fellowship will be conducted under the scheme now known as Grade I. No candidate after the above date will, in any circumstances, be admitted to examination for the Fellowship of this College under the scheme now known as Grade II., which will then cease to be used.

[illegible] —The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

Professional Examinations.—Every candidate must pass four Professional Examinations—at the end of the first, second, third, and fifth years respectively of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other licensing body.

First Professional Examination.—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; and (2) of having attended a course of—(*a*) lectures on Theoretical Chemistry, six months; (*b*) Practical Chemistry, three months; (*c*) Biology, three months; and (*d*) Physics.

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Biology. The fee for this examination is £15 15*s.*

Second Professional Examination.—Candidates are not admissible to this examination till they have passed in the subjects of t[illegible] produce ev[illegible] medico-chir[illegible] dissections, six months; and Lectures on (*a*) Anatomy, six months; (*b*) Physiology, six months; (*c*) Practical Physiology and Histology, three months.

The subjects of the Second Professional Examination are the following:—(1) Anatomy; and (2) Physiology and Histology. The fee for this examination is £10 10*s.*

Third Professional Examination.—Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination and certificates of having attended courses of instruction in (*a*) the practice of a medico-chirurgical hospital for nine months; (*b*) Pathology—(1) Systematic, (2) Practical, three months each; (*c*) Materia Medica, Pharmacy, and Therapeutics, three months; (*d*) Forensic Medicine and Public Health, three months.

The subjects for the Third Professional Examination are the following:—(1) Pathology; (2) Materia Medica, Pharmacy, and Therapeutics; (3) Public Health and Forensic Medicine. The fee for this examination is £9 9*s.*

Final Professional Examination.—Before admission to the Final Examination candidates must have passed the Third Professional Examination and produced evidence of having attended in Division I. the practice of a medico-chirurgical hospital for nine months (unless such evidence has been perviously produced for admission in Division II.); the practice of a recognised fever hospital or the fever wards of a recognised clinical hospital, three months; clinical instruction in Mental Diseases, one month (12 attendances); Lectures on Medicine, six months at a recognised medical school; of having performed the duties of medical clinical clerk in a recognised hospital for three months. In Division II. of having attended the practice of a medico-chirurgical hospital for nine months (unless such evidence has been previously produced for admission to Division I.); clinical instruction in Ophthalmic and Aural Surgery, three months; lectures on Surgery, six months at a recognised medical school; instruction in Operative Surgery, three [illegible] medical school; of having performed [illegible] for three [illegible] midwifery hospital or maternity and having been present at 20 labours, six mont[illegible] certified [illegible] cluding [illegible] six months at a recognised medical school. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the Divisions I., II., or III., provided he has completed his curriculum as far as concerns the division in which he presents himself. The examination in at least one of the divisions must be deferred till the end of the fifth year.

The subjects of the Final Examination are: (1) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (2) Surgery, Operative and Ophthalmic; and (3) Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children. The fee is £6 6*s.* Further particulars can be obtained from the Secretary of the Committee of Management, Royal College of Physicians, Kildare-street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND (SCHOOLS OF SURGERY).—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for over a century. They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued. The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is heated by hot-water pipes and lighted throughout by the electric light. Winter Session commences Oct. 15th; Summer Session, April 1st. Prospectuses and guide for medical students can be obtained post free on written application to the Registrar, Royal College of Surgeons, Stephen's-green, W., Dublin.

Scholarships and Prizes.—At the College there are offered the Class Prizes: two Gold Medals, two Scholarships, and a Bequest. The Class Prizes having the value of £100 are open to students of the class and are awarded for proficiency in the class examination. The Stoney Gold Medal is confined for competition to the Anatomy Class and the Surgery Gold Medal to the Practical Surgery Class. They are each of the value of £3 15*s.*, and are open to students of the respective classes. The Carmichael Scholarship of the value of £15 is open to students of the third year and is awarded on the result of examination in anatomy, physiology, histology, chemistry, materia medica, and pharmacy. The Mayne Scholarship of the value of £8 is open to students of the third and fourth year and is obtained by merit in the subjects of surgery, medicine, pathology, midwifery, and diseases of women. The Barker Bequest of £26 5*s.* is awarded for the best Dissection and is open to all medical students.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who present certificates of having fully completed the course of study as laid down in the curriculum and who pass the necessary examinations. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, with also the privileges of the Apothecary's Licence. There are four professional examinations, the total fees for which amount to 21 guineas. Ladies are eligible for the diploma. Registered medical practitioners will receive the diploma of the Hall upon passing an examination in the subject or subjects not covered by their previous qualifications and on paying a fee of 10 guineas. If medicine or surgery be required 5 guineas extra will be charged.

The fees payable for each examination are as follows:—first professional, £5 5*s.*; second, £5 5*s.*; third, £5 5*s.*; final examination, £6 6*s.* If a candidate gives three clear days' notice of his inability to attend he may present himself at the ensuing examination without a further fee. A candidate is allowed for each professional examination which he has completed at any other licensing body except the final. If he has passed in some only of the subjects in a given examination he has to pay the whole of the fee for that examination. The fees for re-examination are for each subject £1 1*s.*, except in the subjects of surgery, medicine, and anatomy, and the fees for which are 2 guineas each. The fee for the third and final or final alone is £15 15*s.* when the other examinations have been taken elsewhere. All examination fees are [illegible] Bank of Ireland, College Green, [illegible] nation Committee. Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary-street, Dublin, at least 14 clear days before the first day of examination.

There are four examinations—first, second, third, and final. They are held quarterly on the first Monday in January, April, July, and October. The first examination comprises biology, physics, theoretical and practical chemistry (with an examination at the bench). Pharmacy is put down in this examination, but it may be taken at any of the first three examinations. Candidates holding a Pharmaceutical licence are exempt from this subject. The second examination comprises anatomy of the whole body (including practical dissections), physiology, and practical histology. The third examination comprises pathology, materia medica, medical jurisprudence, and hygiene. The final examination comprises medicine, including clinical and oral, surgery, including operations, clinical and oral, ophthalmic surgery, clinical only, midwifery, and gynæcology.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must before proceeding to the final examination produce evidence of having been registered as medical students for 57 months, also of having attended courses of instruction as follows:—one course each (of six months) of the following: anatomy (lectures), chemistry (theoretical), midwifery, practice of medicine, physiology, surgery, and dissections, two courses of six months each. Courses of three months: materia medica, medical jurisprudence, chemistry (practical), practical physiology and histology, operative surgery, physics, clinical ophthalmology, biology, clinical instruction in mental disease, pathology, and a course in vaccination. Medico-chirurgical hospital, 27 months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance, six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital. Three months' study of fever—which may be included in his 27 months' hospital attendance—in a hospital containing fever wards, and having taken notes of five cases of fever—viz., either typhus fever, typhoid fever, scarlet fever, small-pox, or measles. Six months' practical midwifery and diseases of women during the winter or summer of the third or the fourth year at a recognised lying-in hospital or maternity. Three months' practical pharmacy in a recognised clinical hospital or a recognised school of pharmacy, or a year in the compounding department of a licentiate apothecary or a pharmaceutical chemist. Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years. Each candidate must produce evidence of having before entering on medical studies passed a preliminary examination in general education recognised by the General Medical Council and of having been registered by that Council as a student in medicine. Certificates of medical study will not be recognised if the commencement of the course to which the certificate refers dates more than 15 days prior to such registration, except in the subjects of physics or biology. This registration is not undertaken by the Hall. The details of the course of education required and syllabus of the examinations will be supplied on application to the Registrar at 40, Mary-street, Dublin.

HOSPITALS AFFORDING PRACTICE RECOGNISED BY THE IRISH UNIVERSITIES AND CORPORATIONS.[4]

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

Staff.—Physicians: Dr. James Little, Dr. Wallace Beatty, Dr. H. T. Bewley, and Dr. G. Peacocke. Surgeons: Mr. F. T. Heuston, Mr. T. E. Gordon, and Mr. L. G. Gunn. Obstetric Surgeon: Sir W. J. Smyly. Ophthalmic Surgeon: Sir H. R. Swanzy. Throat Surgeon: Dr. S. Horace Law. Pathologists and Bacteriologists: Dr. J. Alfred Scott and Dr. W. Geoffrey Harvey. Dental Surgeons: Dr. Theodore Stack and Mr. John Stanton. Assistant Physician: Dr. W. G. Harvey. House Surgeon: Dr. G. Halpin.

Two resident surgeons are elected yearly and four resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Dermatology will be awarded.

Hudson Scholarship.—In addition to the junior prizes the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in clinical medicine and medical pathology, clinical surgery and surgical pathology, pathological histology, surgical appliances, including instruments and bandaging, ophthalmology, gynæcology, and dermatology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Mr. F. T. Heuston.

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds and consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of diseases peculiar to women. The practice of this hospital is one of the largest in Ireland; nearly 18,000 cases are treated annually, either as intern or extern patients. Lectures are delivered, practical instruction given, and gynæcological operations are performed in the theatres daily. There is a general dispensary held daily, at which instruction is given on the Diseases of Women and Children. There is a special afternoon dispensary held by the Master and his assistants, at which practical instruction in gynæcology is given. There is no extra charge for attendance at this dispensary. There is accommodation for intern pupils who enjoy exceptional advantages of acquiring a thorough knowledge of this branch of their profession. Lady medical students can reside in the hospital. Clinical assistants are appointed from amongst the pupils as vacancies occur. Certificates of attendance at this hospital are accepted by all licensing bodies, and the diploma is recognised by the Local Government Board as a full legal midwifery qualification. The residents' quarters have been much enlarged. A billiard table is available for the use of students. Fees: Extern pupils for full course of six months, £8 8*s.*; three months, £4 4*s.* Intern pupils, one month, £4 4*s.*; each consecutive month, £3 3*s.*; six months, £18 18*s.*; board and lodging in the hospital, 20*s.* per week. Lady students' intern, one month, £5 5*s.*; each consecutive month, £4 4*s.* Registration fee, in advance, 10*s.* 6*d.* Students can enter for attendance at any time, but preference is given to those entering from the first day of the month. Further particulars may be had on application to the Master or the Registrar at the hospital.

Staff.—Consulting Physicians: Sir John W. Moore and Dr. J. M. Redmond. Consulting Surgeons: Dr. F. T. Heuston and Dr. F. W. Kidd. Pathologist: Dr. E. J. McWeeney. Pathological Analyst: Sir C. A. Cameron. Master: Dr. M. J. Gibson. Assistant Master: Dr. W. D. S. Johnstone and Dr. Victor J. McAllister. Registrar: Fred. A. Heney.

SIR PATRICK DUN'S HOSPITAL, Grand Canal-street, Dublin.—Classes for clinical instruction both in Medicine and Surgery are held each morning from 9 o'clock from Oct. 1st till the end of June. Special classes for students commencing their hospital studies will be held in the wards during the months of October, November, and December. They will embrace the elements of Medicine and Surgery, including note-taking. The surgical operating theatre, which has recently been erected, is equipped upon the most approved principles and is thoroughly in accord with modern surgical requirements. Instruction in the Diseases of Women is given Tuesday and Friday at 10 A.M. There is a special wing devoted to fever cases. Pathological and Bacteriological Demonstrations will be given each Friday at 10.30 A.M. during the Winter and Summer Sessions in the new Pathological Laboratory. A new department has been opened for the special treatment of Throat, Nose, and Ear Diseases under the direction of Dr. R. H. Woods. Instruction will be given in these subjects and in the use of the Laryngoscope and Otoscope to senior students on Mondays and Thursdays. Arrangements have been made to give practical instruction in anæsthetics to senior students.

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[4] This list of the institutions recognised by the Conjoint Board of Ireland is supplemented in the regulations of the Colleges by those [illegible] Universities.

Opportunities are given the members of the hospital class of seeing the various applications of the X rays to the diagnosis and treatment of injury and disease. Opportunities are also afforded in the out-patient department for the diagnosis and treatment of the numerous minor ailments not met with in the hospital wa[illegible] on Diseases of the Skin. [illegible] appointed annually. The [illegible] December. Four Resident Pupils are appointed each half-year. Six Surgical Dressers and six Clinical Clerks are appointed each month.

Prizes and Medals.—Clinical medals and prizes will be awarded in Medicine and in Surgery respectively in accordance with the will of the late Rev. Samuel Haughton, M.D., S.F.T.C.D. Candidates who fail to obtain these medals and prizes will be awarded special certificates in Medicine and in Surgery *provided they show sufficient merit. The next* examination will be held in April, 1909.

Fees.—Winter and summer session, £12 12*s.*; winter session (six months), £8 8*s.*; and summer session (three months), £5 5*s.* The practice of this hospital is open to students of medicine in attendance on schools other than the School of Physic, the certificates being recognised by the Royal University and Royal Colleges of Surgeons of England, Ireland, and Scotland.

Consulting Physician: Dr. J. M. Purser. Physicians: Dr. W. G. Smith, Dr. J. Magee Finny, Dr. H. C. Drury, and the King's Professor of Midwifery. Assistant Physician: Dr. E. J. Watson. Surgeons: Sir Charles B. Ball, Dr. E. H. Taylor, and Dr. C. A. K. Ball. Pathologist: Dr. A. C. O'Sullivan. Department for Throat, Nose, and Ear: Dr. R. H. Woods. Assistant Surgeon: Dr. C. M. Benson. X Ray Department: Dr. E. J. Watson. House Surgeon: Dr. D. G. Madill.

Further information will be supplied by the Secretary to the Medical Board, *Dr. H. C. Drury.*

JERVIS-STREET HOSPITAL, Dublin.—Founded 1718; rebuilt 1886. 130 beds. In-patients 1908, 1328; out-patients 1908, 14,328. A new out-patient department is nearly completed and will contain all modern requirements. Physicians: Sir William J. Thompson and Dr. F. Callaghan. Surgeons: Mr. W. Stoker, Mr. L. A. Byrne, Mr. D. Kennedy, and Mr. J. L. Keegan. Surgeon to Out-patient Department: Mr. P. Hayden. X Rayist: Dr. H. W. Mason. Gynæcologist: Vacant. Ophthalmic Surgeon: Mr. M. Maxwell. Pathologist: Mr. E. J. McWeeney. Secretary: Mr. Kienian O'Dea.

MATER MISERICORDIÆ HOSPITAL, Dublin.—Consulting Physician: Sir Francis R. Cruise. Physicians: Sir Christopher Nixon, Bart., Dr. Joseph Redmond, Dr. John Murphy, and Dr. Martin Dempsey. Surgeons: Sir Arthur Chance, Mr. John Lentaigne, and Mr. Alexander Blaney. Assistant Physician: Dr. John O'Donnell. Temporary Assistant Surgeon: Mr. D. Farnan. Obstetric Physician: Dr. Robert Farnan. Ophthalmic Surgeon: Mr. Louis Werner. Surgeon for Diseases of Throat and Nose: Mr. Patrick Dempsey. Dental Surgeon: Mr. E. Sheridan. Pathologist: Dr. Edmond McWeeney. *Assistant Pathologist:* Dr. W. D. O'Kelly. Anæsthetist and Surgical Registrar: Dr. Patrick O'Farrell. This hospital, the largest in Dublin, at present containing 345 beds, is open at all hours for the reception of accidents and urgent cases. Clinical instruction will be given by the Physicians and Surgeons at 9 A.M. daily. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Opportunities are afforded for the Study of Diseases of Women in the ward under the care of the Obstetric Physician, and at the Dispensary held on Tuesdays and Saturdays. *Ophthalmic Surgery will be taught in the Special Wards* and in the Dispensary. Surgical Operations will be performed on Mondays, Tuesdays, Fridays, and Saturdays at 11 o'clock. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents. Instruction will be given on Pathology and Bacteriology. Two House Physicians, six House Surgeons, and 20 resident pupils will be elected annually. Dressers and Clinical Clerks will also be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes will be offered for competition annually. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and a Home for Trained Nurses have been opened in connexion with the Hospital.

Terms of attendance.—Nine months, £12 12*s.*; six winter months, £8 8*s.*; three summer months, £5 5*s.* Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c., may be obtained from the Secretary, Medical Board.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.—Physicians: Sir John William Moore, Dr. James Craig, and Dr. Edward E. Lennon. Surgeons: Sir L. H. Ormsby, Mr. W. J. Hepburn, Mr. William Taylor, Mr. R. Lane Joynt, and Mr. F. Conway Dwyer. Gynæcologist: Dr. F. W. Kidd. Clinical Assistants: Dr. William Boxwell and Dr. Henry Stokes. Pathologist: *Professor Arthur H. White.* This hospital was founded in 1753 and now contains 160 beds available for clinical teaching. A building containing 40 beds for the isolated treatment of fevers is attached to the hospital. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and 12 Surgical Resident Pupils and Dressers are appointed every six months, and a House Surgeon and two Clinical Assistants are elected annually. The *session will open on Oct. 1st. A prospectus* giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, Mr. William Taylor, 47, Fitzwilliam-square, Dublin.

MERCER'S HOSPITAL.—This hospital, founded in 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c. There are a large out-patient department and a special department for diseases peculiar to women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8*s.*; Summer, three months, £5 5*s.*; nine months, £12 12*s.*

Consulting Physician: Dr. J. Magee Finny. Consulting Surgeon: Mr. H. Fitzgibbon. Consulting Gynæcologist: Dr. J. H. Glenn. Consulting Ophthalmic Surgeon: Mr. J. B. Story. Physicians: Dr. E. L'Estrange Ledwich and Dr. J. Lumsden. Surgeons: Mr. R. C. B. Maunsell, Mr. S. S. Pringle, and Mr. W. Ireland de C. Wheeler. Gynæcologist: *Dr. Gibbon Fitzgibbon. Pathologist and Radiologist:* Dr. W. G. Harvey.

For further particulars apply to Mr. Seton Pringle, Hon. Sec., Medical Board, 27, Lower Baggot-street, Dublin.

NATIONAL MATERNITY HOSPITAL, Holles-street, Dublin.—Established 1894. Masters: *Dr. A. J. Horne* and *Dr. R. J.* White. In-patients, 872; out-patients, 1048.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.—These hospitals contain 270 beds—86 for Surgical cases, 64 for Medical cases, and 120 for Fever and other Epidemic Diseases.—A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services. 12 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Sir W. Thomson, C.B., Hon. Treasurer, 54, Stephen's-green East; or to Dr. Travers Smith, Hon. Secretary, 20, Lower Fitzwilliam-street, Dublin.

ROTUNDA HOSPITAL, Dublin.—This institution is the largest combined gynæcological and maternity hospital in the British empire. Qualified men who take out a course of three months' duration during the autumn, winter, or spring periods obtain (if they show keenness and capacity) one or more forceps applications and a certain number of minor gynæcological operations. Unqualified students can also enter at any time for the practice of the hospital and have access, not alone to the maternity and gynæcological wards, but also to the pathological laboratory attached to the hospital. The residential quarters have undergone considerable improvement and afford comfortable accommodation. Valuable appointments are periodically filled by qualified students who have obtained the hospital diploma. Women students can reside in the hospital on terms similar to those enjoyed by men. Master: Dr. E Hastings Tweedy. Assistants: Dr. B. A. H. Solomons and Dr. J. R. Freeland. Pathologist: Dr. R. J. Rowlette. Resident Extern-Maternity Assistants: Dr. H. G. Massy-Miles and Dr. W. E. Tulloh. For further particulars apply to Dr. E. Hastings Tweedy, Master.

ROYAL CITY OF DUBLIN HOSPITAL.—Founded 1832; enlarged 1851; rebuilt 1893. 120 beds. Consulting Physician: Dr. H. Benson. Physicians: Dr. A. R. Parsons and Dr. T. G. Moorhead. Consulting Surgeon: Mr. H. Fitzgibbon. Surgeons: Mr. G. J. Johnston, Mr. H. Moore, and Mr. R. A. Stoney. Ophthalmic and Aural Surgeon: Mr. A. H. Benson. Gynæcologist: Mr. R. H. Fleming. Anæsthetist: Mr. O. E Boyce. Dental Surgeon: Mr. D. L. Rogers. Secretary: Mr. T. Spunner.

ROYAL VICTORIA EYE AND EAR HOSPITAL, Dublin.—Established 1844. Incorporated 1897. 82 beds. Consulting Physician: Dr. J. Little. Consulting Dental Surgeon: Mr. A. W. W. Baker. Surgeons: Sir Henry Swanzy, Mr. J. B. Story, and Mr. A. H. Benson. Junior Surgeon: Mr. P. W. Maxwell. Assistant Surgeons: Mr. L. Werner, Mr. R. J. Montgomery, Mr. H. C. Mooney, and Mr. F. C. Crawley. Physician to Dispensary for Throat: Dr. R. A. Hayes. Surgical Radiographer: Mr. W. S. Haughton. Registrar: Mr. E. Parker. In-patients, 1428; out-patients, 9548.

DR. STEEVENS' HOSPITAL, Dublin.—Established 1720. 200 beds. Consulting Physicians: Dr. J. Little, Dr. J. M. Purser, and Dr. H. C. Tweedy. Consulting Surgeon: Sir C. B. Ball. Physicians: Dr. R. A. Hayes and Dr. T. P. C. Kirkpatrick. Assistant Physician: Dr. W. A. Winter. Surgeons: Mr. R. B. McCausland, Mr. R L. Swan, and Mr. W. S. Haughton. Assistant Surgeon: Mr. W. C. Stevenson. Anæsthetist: Mr. J. J. Purser. Obstetric Physician and Gynæcologist: Dr. H. Jellett. Ophthalmic and Aural Surgeon: Mr. J. B. Story. Pathologist: Mr. R. L. Rowlette. Dental Surgeon: Mr. G. M. P. Murray. Resident Surgeon: Dr. W. L. Hogan. Secretary; Mr. G. E. Pepper. Patients, 1208.

ST. VINCENT'S HOSPITAL AND DISPENSARY, Dublin.—Established 1834. 160 beds. Physicians and Lecturers on Medicine: Dr. M. F. Cox, Dr. M. McHugh, and Dr. W. J. Dargan. Physician for Extern Department: Dr. J. Meehan. Surgeon for Extern Department: Mr. R P. McDonnell. Surgeons and Lecturers on Surgery: Mr J. S. McArdle, Mr. R. F. Tobin, and Mr. P. J. Fagan. Gynæcologist and Lecturer on Gynæcology: Mr. A. J. Smith. Ophthalmic Surgeon and Lecturer on Diseases of Eye and Ear: Mr. F. Odevaine. Pathologist and Lecturer on Pathology: Dr. T. J. O'Farrell. Surgeon-Dentist and Lecturer on Dentistry: Mr. J. J. Murphy. Pharmacist and Lecturer on Pharmacy: R. Shaw.

UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a practitioner's examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. The fees are—For matriculation, £8 12*s.*; for 1st Part, £4 4*s.*; for 2nd Part, £4 8*s.*; for 3rd Part, £4 8*s.*; for legalisation of diploma, 8*s.*—total, £22. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. Unsuccessful candidates are allowed to come up again three months after rejection on payment of examination fees only, provided this second appearance be in the course of the same academical year (October 1st to June 30th), otherwise they must renew the payment of the matriculation fee of £8 12*s.* The examination consists of three parts, viz.—1st Part: General Medicine; Materia Medica and Pharmacology; General Surgery; and Theory of Midwifery. 2nd Part: General Therapeutics; Pathology and Morbid Anatomy, with use of the microscope; Special Therapeutics and Medicine of Internal Diseases, including Mental Diseases; and Special Surgery. 3rd Part: Public and Private Hygiene; Medical Jurisprudence; Clinical Medicine; Clinical Surgery; examination in Operative Surgery, [illegible] of the usual operations on the dead subject—viz., Amputation, Ligature of an Artery, &c.; Ophthalmology; examination in Midwifery, consisting in obstetrical operation on the mannikin (model of pelvis); and examination in Regional Anatomy with Dissection. The time required for the three examinations seldom exceeds ten days, and is usually less. Candidates have the option of passing each part separately or of taking the three together, and the latter is the usual course; also of demanding a written examination on payment of an additional fee of one guinea for each part, a rule of which candidates rarely or never avail themselves. The examinations, which are *vivâ voce*, begin on the first Tuesday in November, December, March, May, and middle June. Candidates should appear with their medical registration certificate or their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. Most of the examiners speak English and those who do not examine through the medium of an interpreter. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. There are in England at present over 600 graduates holding this degree, and a British Association of Brussels Medical Graduates has been in existence for many years. Applications should be made to the Secrétariat, 14, Rue des Sols, Bruxelles.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE conditions of service in the medical departments of the Navy, Army, and Indian Army remain practically the same as for 1908. There is no new warrant or important modification of regulations calling for particular comment; and except to lay stress on the fact that the military services now offer a better opening to young medical men than they have ever done we do not propose to make any special reference to them. The terms of the warrants sufficiently explain t[illegible]

With [illegible] Medical Service a few prefatory words are needed, for we have from time to time published articles dealing with the considerable amount of dissatisfaction which exists therein, while in summarising communications from our correspondents we came to the inevitable conclusion that some of the unfavourable criticism was just. We would strongly urge on the authorities the advisability of removing legitimate grievances *now;* the reforms could for the most part be effected at the expense of little but tact and a consideration of what is justly due to the naval medical officers. Every naval medical officer who has written to our columns, and this is not a small number, has expressed dissatisfaction with the position in which the cabin question has been left by recent regulations. Allotment to the medical officer of cabin accommodation inferior to that to which he is entitled still takes place, and cannot, at any rate cannot always, be explained by the cramped space on that elaborate box of tricks, a modern man-of-war. Another innovation sadly wanted is a regulation to ensure that the senior medical officers in hospitals should have proper disciplinary power over their subordinates and patients. Other points, the supply and use of boats, for example, and the payment in certain grades, might well be settled in accordance with the just desires of the Naval Medical Service, *for the* Admiralty will be prudent to *aim at making* the Service more popular. And the same may be said of all three services. For that there is now no competition for commissions in the Naval Medical Service and no keen competition for those in the Army Medical Corps or the Indian Medical Service seems undeniable, and this is the more unfortunate a position that fewer men are now entering the medical profession as a whole. It is no longer easy for all hospitals to obtain suitable residents, while assistants are scarce and even junior partners are not to be found directly they are wanted. The Services will therefore have to be careful to increase their popularity, and the point is that it may be economical of them to do so now. By small concessions they may be avoiding having later to pay a heavy price to attract men. We would also suggest that it is unwise to let any of these departments run below the normal strength if it is possible to maintain them at par.

Though reform may be wanted in the Naval Medical Service, its present state is not without material advantages. At one time not so very long ago the Naval Medical Service was not looked upon as one in which an educated gentleman could serve with dignity, while complaints were heard of many of the conditions of service. But the old order of things is giving place to the new, and a comparison of the lot of the naval medical officer with that of the civil practitioner will show that the trials of the civil branch of the profession are greater than those of the naval branch, and probably when all things are considered the naval surgeon is in a far better position than the average lay professional man. In the junior ranks of the Service the pay is better than the average income of the lay medical man of the same age, and promotion is not always slow. With £20 a month the young naval surgeon can, if he is not extravagant, get along very comfortably, though he will require at the commencement of his career £100 for outfit. A private income is certainly not necessary though it is eminently desirable. After 20 years of service a naval surgeon is entitled to a pension of £350 a year, which compares very favourably with the prospects of many medical men on the civil side of the profession, and in case of illness there is the half-pay rate, while pensions are provided for widows and children. In this way the young naval officer is relieved of the most serious anxiety which can press upon a married man, but he ought not to marry young without due consideration, a warning which, however, applies to most medical men. With regard to the Medical Services of the Army and Indian Army, a comparison with that of the Navy shows that though the Army and Indian Service are better paid, expenses are higher and the work more fatiguing, while in the Indian Service there is a greater liability to disease and death. The young surgeon, too, on board his vessel probably gets a better chance in the Navy than in the Army. So long as the new surgeon is moderately good at his profession, is kind and unselfish towards his patients, is not too self-assertive, and has any positive accomplishments or skill at any sport or game, he should get on very well, especially if he is good-humoured and helpful. And if a man has not these qualities and readiness where should he be advised to practise?

ROYAL NAVY MEDICAL SERVICE.

REGULATIONS FOR THE ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

[illegible]

or abroad, as required; (b) whether he holds, or has held, any commission or appointment in the public services; and (6) that he is

is duly qualified profession-

diseases, and his physical

Medical Officers, who are to

[illegible]

above.

[illegible]

for which the maximum number of marks obtainable will be—French and German (300 each), 600 marks. A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candi-

[illegible]

-iver-

the

oved

and

duly

Surgeons on entry are only required to provide themselves with a pocket case of instruments, a stethoscope, and three clinical thermometers. All other instruments are provided at the public expense.

Promotion.

[illegible]

regard as good and sufficient.

A Deputy Inspector General of Hospitals and Fleets will be selected

[illegible]

Surgeon, provided they are recommended by the Medical Director-

in the

satis-

[illegible]

ships'

date of

General,

pletion

Special

rank of

---

[1] If any doubt should arise on this question the burden of clear proof that he is qualified will rest upon the candidate himself.

failure to pass the qualifying examination he will, should he pass and be promoted, be dealt with as follows. He will be granted the seniority as Staff Surgeon he would have received had he passed in ordinary course. He will reckon service for increase of full and half pay only from the date of appointment to full pay as Staff Surgeon. If on half pay, or if placed on half pay when promoted, he will receive the lowest rate of half pay of the new rank from the date of passing the qualifying examination Where delay in passing the qualifying examination may be due to unavoidable circumstances special consideration will be given. (*d*) The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of the Haslar course and their names will then be placed in the official navy list, except in the case of candidates who hold, or are about to hold, a post as resident medical officer or surgical officer to a recognised civil hospital. These candidates will retain the position in the list which they obtained on entry, and when their period of service as resident officer is over they will join the next Haslar course and will be [illegible] Surgeons entered without compe[illegible] last surgeon entered at the same [illegible] tion for promotion to the rank o[illegible] mining Board, to which a naval [illegible] duct the examination in naval hygiene. The subjects of examination will be in writing and will include medicine, surgery, pathology, general hygi[illegible] promotion to the rank of staff surgeon may [illegible] who, before entry, have held the post of [illegible] dical or surgical officer to a civil hospit[illegible] ls for a period of not less than six months, provided their conduct and professional abilities have been [illegible] g the time they have served in the Navy. [illegible] months to one year's seniority, according [illegible] heir civil appointments, but in no case will more than one year's seniority be granted. This only applies to officers who enter by competition. (*f*) A candidate who at the time of passing the examination for entry into the medical branch of the Royal Navy holds, or is about to hold, an appointment as resident medical or surgical officer in a recognised civil hospital, may be allowed to serve in such civil appointment provided that the period of such service after the date of entry into the Royal Navy does not exceed one year. Pay from naval funds will be withheld from officers while thus serving, but the time concerned will reckon for increase of full and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal, except that no officer will be allowed to retire on a gratuity until he has completed four years' service exclusive of the time spent as resident medical or surgical officer. The eligibility of this appointment will also be decided by the Medical Director-General.

Full Pay and Allowances.

Rank.	Daily.	Yearly.
Surgeon—	£ s. d.	£ s. d.
On entry	0 14 0	255 10 0
After 4 years' full-pay service	0 17 0	310 5 0
Staff Surgeon—		
On promotion	1 0 0	365 0 0
After 4 years' full-pay service in rank ...	1 4 0	438 0 0
Fleet Surgeon—		
On promotion	1 7 0	492 15 0
After 4 years' service in rank	1 10 0	547 10 0
" 8 " "	1 13 0	602 5 0
" 12 " "	1 16 0	657 0 0
Deputy Inspector-General	2 2 0	766 10 0
Inspector-General	—	1300 0 0 Consolidated

The medical officers in charge of the following hospitals and sick quarters will be granted charge pay: Haslar, Plymouth, Chatham, Malta, Hong-Kong, Bermuda, Portland, Yarmouth, Haulbowline, Cape, Gibraltar, and Yokohama. The rate of charge pay will be as follows:—

	s.	d.	
Inspectors-General...	10	0	a day.
Deputy Inspectors General	7	6	"
Fleet Surgeons of over 4 years' seniority	5	0	"
Fleet Surgeons of under 4 years' seniority and Staff Surgeons	2	6	"

The hospital allowances for naval medical officers at home and abroad, in lieu of provisions, for themselves and servants, and for fuel and lights, are as follows:—

—	At home.	Abroad.
	£	£
Deputy Inspectors-General	67	112
Fleet Surgeons and Staff Surgeons of over 4 years' seniority	53	112
Staff Surgeons of under 4 years' seniority and Surgeons...	39	108*

* Except at Malta, where the allowance will be £70, but servants will be provided at the public expense. These allowances are also granted to medical officers of marine divisions and dockyards

An allowance of 5*s*. a day, in addition to full pay, is granted to the senior medical officer, being a Fleet or Staff Surgeon, of a flag-ship bearing the flag of a Commander-in-Chief. An allowance of 2*s*. 6*d*. a day is granted to the senior medical officer, being a Fleet or Staff Surgeon, of the ship bearing other flags or broad pendants The following charge allowances may be granted to medical officers in charge of hospital ships: if above the rank of fleet surgeon, 5*s*. a day; and if of the rank of fleet surgeon or junior, 3*s*. 6*d*. a day. The Fleet and Staff Surgeons serving in the Admiralty and the Marine Rendezvous will be granted the Hospital allowance of £53 a year in addition to the usual lodging money. Medical officers conducting the course of instruction at Haslar Hospital will receive the following allowances: two senior officers employed upon this duty, £150 a year each; the junior officer assisting, £50 a year; and the junior officer instructing the Sick Berth Staff, £50 a year. The junior officer instructing the Sick Berth Staff at Plymouth, £50 a year. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1*s*. 6*d*. a day in lieu of provisions, fuel, and lights. The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the service.

Half Pay.

Rank.	Daily.	Yearly.
Surgeon—	£ s. d.	£ s. d.
Under 2 years' full-pay service	0 6 0	109 10 0
After 2 years' full-pay service	0 7 0	127 15 0
" 4 " "	0 8 0	146 0 0
" 6 " "	0 9 0	164 5 0
Staff Surgeon (or Surgeon over eight years)—		
On promotion	0 10 0	182 10 0
After 2 years' service in rank	0 11 0	200 15 0
" 4 " "	0 12 0	219 0 0
" 6 " "	0 13 0	237 5 0
Fleet Surgeon—		
On promotion	0 14 0	255 10 0
After 2 years' service in rank	0 15 0	273 15 0
" 4 " "	0 17 0	310 5 0
" 6 " "	0 18 0	328 10 0
" 8 " "	0 19 0	346 15 0
" 10 " " (maximum) ...	1 0 0	365 0 0
Deputy Inspector-General—		
On promotion	1 5 0	456 5 0
After 2 years' full-pay service in rank	1 7 0	492 15 0
" 4 " "	1 9 0	529 5 0
Inspector-General	1 18 0	693 10 0

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo.

Retirement.

Compulsory retirement will be as follows:—

Inspector and Deputy Inspector-General of Hospitals and Fleets.	At the age of 60, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined. Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an Inspector-General of Hospitals and Fleets on the active list, the age for the retirement of such Inspector-General may be extended to 62.	To be retired irrespective of age if found physically unfit for service.
Fleet Surgeon, Staff Surgeon, and Surgeon.	At the age of 55, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined.	

The special attention of candidates is directed to the following rules under which officers are allowed to withdraw from the service after four years' full pay service in the Royal Navy, with the advantage of joining the Reserve of Naval Medical Officers:—

After four years' service in the Royal Navy, an officer, if he wishes, may pass from active service to the Reserve of Naval Medical Officers, when he [illegible]

(1) He [illegible] passing into the Reserve.

(2) His [illegible] y List; he will retain his naval rank and be entitled to wear his naval uniform under the regulations applying to officers on the retired and reserved lists of His Majesty's Navy.

(3) If he agree to remain in the Reserve for four years he will receive a retaining fee of £25 per annum. If at the expiration of this period he agree to remain in the Reserve for a further period of four years he will continue to receive the same retaining fee.

Should an officer prefer it, however, he may simply enter the Reserve for a period not exceeding eight years, with power to give six months' notice of his intention to resign his position at any time (in which case he will receive no retaining fee). He may also adopt this method of Reserve service after the expiration of four years served under the conditions referred to in (3), by renouncing his retaining fee for his last four years' service in the Reserve.

No officer will be allowed to remain in the Reserve for a longer period than eight years.

Officers of the Reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service they will receive the rate of pay—viz., 17*s*. a day [illegible] to which they [illegible] after four years [illegible] llows. [illegible] and withdrawa[illegible] have the option, subject to their Lordships' approval, of retiring after 20 years' full-pay service on the scale of retired pay provided in Paragraph 16, or with a gratuity on the scale provided in that paragraph if not eligible for retired pay. (*b*) At the expiration of four, eight, 12, or 16 years' full-pay service every officer will be [illegible] approval to withdraw from the [illegible] Paragraph [illegible] m the list of the Navy, with which all connexion will then be severed, except in the case of officers who withdraw after four years who are liable to serve in the Reserve. (c) Voluntary retirement and withdrawal at the discretion of their Lordships will be allowed, as a rule, only when an officer is unemployed or serving at home. Under special circumstances, however, it may be permitted in the case of an officer serving [illegible]

reserve to themselves power to remove any officer from the list for misconduct.

Gratuities and retired pay will be awarded on retirement and withdrawal on the under-mentioned scale—

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon, Staff Surgeon, and Fleet Surgeon—			
After 4 years' full-pay service...	500 0 0	—	—
After 8 years' full-pay service (including service allowed by Para. 4 (*f*)) ...	1000 0 0	—	—
After 12 years' full-pay service (including service allowed by Para. 4 (*f*)) ...	1500 0 0	—	—
After 16 years' full pay service (including service allowed by Para. 4 (*f*)) ...	2250 0 0	—	—
Fleet Surgeon—			
After 20 years' service (including proportion of half-pay time)	—	*1 0 0	365 0 0
After 24 years' service (including proportion of half-pay time)	—	*1 2 6	410 12 6
After 27 years' service (including proportion of half-pay time)	—	*1 5 0	456 5 0
After 30 years' service (including proportion of half-pay time), or on compulsory retirement at the age of 55	—	*1 10 0	547 10 0
Deputy Inspector-General ...	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the commission of Fleet Surgeon.

[illegible]

rate of £125 for each year of full pay service.

[illegible]

civilians.

Widow's Pension.

When an officer retires or withdraws *on a gratuity* his widow and children will have *no claim* to pension or compassionate allowance. In respect to other officers on the active or retired list, the widow's pension ranges from £50 per annum for a surgeon's widow up to £120 for the widow of an Inspector-General; for each child an allowance is granted ranging from £9 to £20 per annum. Officers serving in the [illegible] on duty, or lose their [illegible] come under the same [illegible] elves, or pensions and [illegible] children, as officers of [illegible]

Miscellaneous.

[illegible]

The Admiralty has made a considerable effort to make the Medical Service attractive to men of a good professional stamp. By the regulations promulgated in 1903, promotion was accelerated, special promotion in the lower grades was [illegible] conspicuous [illegible] the service, [illegible] men who have held residen[illegible] hospitals. A feature of the present [illegible] to withdraw at the end of four [illegible] £500. The pay has been increa[illegible] vances, the medical officers of the navy, up to the senior ranks, are not as well off as those of the Royal Army Medical Corps. In spite of the steps taken by the Admiralty there is still much discontent among naval medical officers, and such discontent will exist until the medical officers are unhampered in the performance of their important work by the executive officers. The medical officers should have control over the sick bay staff in ships, and over nurses and other attendants in hospitals, and executive officers should no longer figure as presidents of "medical surveys." The authority of the Director-General must be made adequate. More care must also be taken that medical officers are assigned fitting cabin accommodation. To make the service thoroughly efficient the medical officers must be given authority and position commensurate with their responsibilities, as has been done in the case of the Engineer department. A committee, presided over by Vice-Admiral Sir J. Durnford, was appointed last February to inquire into these matters, whose report may shortly be looked for.

ARMY MEDICAL SERVICE.

During recent years the medical service of the Army has passed through many stages of evolution, and we consider [illegible]

War Minister, marked the first great step; then came a period of strain during the war in South Africa, when the medical services were exposed to fierce criticism. The outcome of this was the appointment of a committee of inquiry in 1901 by Mr. Brodrick (now Lord Middleton), over which he himself presided. This committee included many eminent civilian members of the profession; their chief recommendations were that an advisory board should be constituted, comprising civilian as well as military medical members; that the pay of the medical service should be substantially increased all round; that advancement should be, at any rate in some considerable degree, dependent on professional merit, and not, as hitherto, almost entirely by seniority; that, by granting special leave for professional study, and by providing post-graduate training at the Army [illegible]

for educational training and scientific investigation, and [illegible] should serve as a centre for [illegible] the corps. By this step, an [illegible] advisory board at the War [illegible] professional men, the med[illegible] brought into close relations with the great London hospitals and their staffs, and the civilian heads of the profession;

---

[3] If the health of a surgeon breaks down before he completes 20 [illegible] Service or be [illegible] on the retired [illegible] if noted, as it is [illegible]

and there can be no doubt that great benefit has resulted therefrom. There is now a much stronger and livelier professional feeling in the corps, and this results in a keener devotion to work all round than was the general rule in former days. It is certainly the case that from the scientific and professional standpoint the Royal Army Medical Corps offers a much better prospect than at any previous time; there is now not only opportunity, but encouragement, for a man to perfect himself in some particular branch, it is made worth his while to do so, and advancement in some considerable degree depends upon his professional zeal and capabilities. A Royal Warrant embodying the recommendations of Mr. Brodrick's committee was issued in 1902, which regulates the existing conditions of service; in 1907 free passages to India were granted for the wives and families of medical officers, whether employed on duty or not, an important concession, and one evidencing the liberal spirit of the War Office towards the medical service.

REGULATIONS FOR ADMISSION TO THE ROYAL ARMY MEDICAL CORPS (ISSUED WITH ARMY ORDERS DATED JUNE 1ST, 1909).

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination. He must, at the time of his appoi[illegible]ical Acts in force in the United [illegible] to the subjoined form of applic[illegible]o the Director-General, A.M.S., [illegible] to the medical school in which the candidate completed his course as a medical student.

*Application of a Candidate for a Commission in the Royal Army Medical Corps.**

(N.B.—It is of great importance that the names given in the birth certificate should be correctly given on this form, and it is to be clearly understood that when they differ the names and date of birth given in the birth or baptismal certificate will be accepted for official record.)

1. Name in full... ... ...
2. Address ... ...
3. Date of birth † ... ...
4. Nature and date of examination qualifying for registration ... .
5. Date of registration as a medical student ... ...
6. Dates of passing medical examinations—
   First ... ...
   Second ... ...
   Final ... ...
7. Qualifications ... ...
8. Academic and other distinctions ... ...
9. Medical school or schools in which the candidate pursued his course as a medical student, and name or names of the deans or other responsible authorities ....
10. Particulars of any commission or appointment held in the public services, including service in the officers training corps ... ...
11. Date of examination at which the candidate proposes to present himself ... ...

Declaration.

(N.B.—A mis-statement by the candidate will invalidate any subsequent appointment and cause forfeiture of all privileges for services rendered.)

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief and further:—

1. That I am a British subject of unmixed European blood.

2. That I am not, as far as I know, at present suffering from any mental or bodily infirmity, or physical imperfection or disability that is likely to preclude me from efficiently discharging the duties of an officer in any climate.

3. That I will fully reveal to the Medical Board, when physically examined, all circumstances within my knowledge that concern my health.

I also declare that my vision is good with either eye (with or without the aid of glasses as the case may be).

Signature ....
Date ....

* All communications to be addressed to the Secretary, War Office, Whitehall, S.W.

† A certificate of registration of birth to be furnished.

The dean, or other responsible authority, of the candidate's school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the corps. A candidate whose application is regarded as satisfactory will be directed to appear before the Director-General, Army Medical Service, a few days preceding the examination. The Director-General will decide if the candidate may be allowed to compete for a commission. If approved, he will then be examined as to his physical fitness by a board of medical officers. The following is the order of the examinations:—

1. A candidate for a commission in the Royal Army Medical Corps must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of military duty.

2. The attention of the board will be directed to the following points: (*a*) That the correlation of age, height, weight, and chest girth is not less than that which is given in the following table:—

Physical Equivalents.

Age.	Height without shoes.	Chest.	
		Girth when expanded.	Range of expansion.
	Inches.		
21 and upwards.	62½ and under 65	35 inches.	2 inches.
	65 " 68	35½ "	2 "
	68 " 70	36 "	2 "
	70 " 72	36½ "	2½ "
	72 and upwards.	37 "	2½ "

(*b*) [illegible] The candidate will be placed against the stand[illegible] and the weight thrown on the heels and [illegible] the feet. He will stand erect without rigidity and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar and the height will be noted in parts of an inch to eighths.

(*c*) Measurement of chest. The candidate will be made to stand erect with his feet together and to raise his hands above his head. T[illegible] adjusted round the chest with its posterior [illegible] inferior angles of the shoulder blades and its [illegible]per part of the nipples. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The maximum expansion during deep inspiration will be carefully noted.

(*d*) Weight. The candidate will also be weighed and his weight recorded in the proceedings of the Board.

(*e*) The regulations regarding the examination of eyesight are as follows:—

1. If a candidate can read D.=6 at 6 metres (20 English feet) and D.=0 6 at any distance selected by himself, with each eye without glasses, he will be considered *fit*.

2. If a candidate can only read D.=24 at 6 metres (20 English feet) with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D.=6 at 6 metres (20 English feet) with one eye, and D.=12, at the same distance with the other eye, and can also read D.=0 8 with each eye without glasses, at any distance selected by himself, he will be considered *fit*.

3. If a candidate can read D.=6 at 6 metres (20 English feet) with one eye, a higher defect than D.=24 will be accepted in the other; and if he can read D=36 with the defective e[illegible] distance, the defect being due to error in refractio[illegible] glasses so that he can read, at least, D.=[illegible]

4. If a candidate cannot read D.=24 [illegible] with each eye without glasses, notwithstanding he can read D.=0 6, he will be considered *unfit*. The candidate must be able to read the tests without hesitation in ordinary daylight. (N.B.—The Army test [illegible] the types and Snellen's test ty[illegible] acuteness of vision.) Squint, [illegible] risk of aggravation or recurren[illegible] of a candidate. Inability to distinguish the principal colours will not be regarded as a cause for rejection, but the fact will be noted in the report, and the candidate will be informed. The degree of acuteness of vision of all candidates for commissions (including preliminary examinations) will be entered in their reports in the following manner:—

Sufficient ... ... { Right eye ... V =
{ Left eye ... V =
Defective ... ... { Right eye ... V =
{ Left eye ... V =

No relaxation of the standard of vision will ever be allowed.

The following additional points will then be observed. (*f*) That his hearing is good. (*g*) That his speech is without impediment. (*h*) That his teeth are in good order. Loss or decay of ten teeth will be considered a disqualification Decayed teeth if well filled will be considered as sound. (*i*) That his chest is well formed and that his heart and lungs are sound. (*j*) That he is not ruptured. (*k*) That he does not suffer from varicocele or varicose veins in a severe degree. A candidate who has been successfully operated on will be accepted. A definition of severe varicocele [illegible] the Director-General Army Medical Service, [illegible] S.W. (*l*) That his limbs are well formed and d[illegible]ere is free and perfect motion of all the joints. (*n*) That his feet and toes are well formed. [illegible] any inveterate skin disease. (*p*) That h[illegible] or defect. (*q*) That he does not bear [illegible]nic disease pointing to an impaired [illegible]e is not of pure European descent the fact should be recorded by the board. If a candidate be pronounced physically fit for service at home and abroad he will be eligible to present himself [illegible] which will be held twice in the yea[illegible]ndidate

The Army Council reserv[illegible] who may show a deficiency i[illegible]tted to

An entrance fee of £1 is required from each candidate [illegible] the examination and is payable at the conclusion of his physical examination, if pronounced fit.

Candidates who have been specially employed in consequence of a national emergency, either as an officer or in a position usually filled by an officer, will be allowed to reckon such service towards retired pay and gratuity, and if over the [illegible] mencement of th [illegible]

for two or more [illegible]

Director [illegible] characte [illegible] Corps, h [illegible] sion will [illegible]

Candidates w [illegible] medicine and surgery. [illegible] practical character, partly written and partly oral, marks being allotted under the following scheme.

Medicine (written).	Maximum marks.
A. Examination and report upon a medical case	125
B. Commentary [illegible]	100
(Two perio [illegible] alf hours—[illegible])	
A. Clinical cases	100
B Medical pathology	75
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A; 30 minutes to examine specimens and ten minutes *viva voce*—total, 40 minutes—for B.)	
Surgery (written).	
A. Examination and report upon a surgical case	100
B. Commentary upon a case in surgery	125
(Two periods of 45 minutes—total, one and a half hours—for A, and one and a half hours for B.)	
Surgery (oral).	
A. Clinical surgery and pathology (including diseases of the eye)	75
B. Operative surgery and bandaging (including surgical instruments and appliances)	100
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A, and about 30 minutes for B.)	
Total marks	800

The following headings are published as a guide to candidates in drawing up their reports on cases:—(a) A brief history of the case as [illegible]

clinical aspects of the case. (c) The diagnosis, with reasons for [illegible] operative, &c., in- [illegible] native schemes of [illegible] appearances and [illegible] and will occupy about four days.

The appointments announced for the competition will be filled up from the list of qualified candidates arranged in the order of merit, as determined by the total number of marks each has obtained. Having gained a place in this entrance examination the successful candidates will be ordered to proceed to the Royal Army Medical College for instruction in recruiting duties, at the termination of which they will undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical [illegible] ill be examined in these [illegible] of marks obtainable at [illegible] the present time the pro- [illegible] College are Major C. G. Spencer, M.B., F.R.C.S., in the department of military surgery; Lieutenant-Colonel Robert J. S. Simpson, M.B., C.M.G., in the department of military medicine; Lieutenant-Colonel Sir W. B. Leishman, M.B., in the department of [illegible]

of the Royal Army Medical College, instructs in hospital and corps administration, in the duties of officers on transports, and in the examination of recruits, and Brevet-Colonel F. J. Lambkin lectures on Syphilology. The course of hygiene has hitherto comprised the examinations of water and air, the general principles of diet with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease, both at home and under the conditions of foreign service, also with particular reference to active service in the field. The pathological course has up to the present time included bacteriology and demonstrations in physiological chemistry, special attention being given to modern methods of research in the causation of tropical disease. The surgical course consists of lectures and demonstrations in military surgery and lectures on errors of refraction from a military point of view. On completion of the above course Lieutenants on probation will join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps, and at the end of the course will be examined in the subjects taught. The maximum number of marks obtainable at this examination will be 100. A Lieutenant on probation who fails to qualify in either of these examinations will be allowed a second trial, and, should he qualify, will be placed at the bottom of the list. Should he again fail in either examination his commission will not be confirmed. Illiteracy on the part of a candidate as evinced by inaccurate spelling, poor composition, or grammatical errors in the oral examination, at the entrance examination, or at the examinations undergone while on probation will be regarded as disqualifying for appointment.

EXAMINATIONS FOR PROMOTION IN THE ROYAL ARMY MEDICAL CORPS.

These examinations are intended to test the progress and proficiency of officers in those branches of knowledge which are essential to their continued efficiency.

[illegible] *Captain*.—This examination may be [illegible] ng 18 months' service and will be [illegible] hich the officer is serving. The [illegible] are detailed in the King's Regu- [illegible] company, and corps drills and exercises; [illegible] the terms of the Geneva Convention; (b) a general [illegible] pment of the [illegible] ties of ward- [illegible] eparation of [illegible] (4) duties of [illegible] be examined [illegible] celeration in [illegible] of the Pay [illegible] ill be placed [illegible] acceleration [illegible] re him.

[illegible] Major, will be held [illegible] serving at times which will be duly notified. The subjects of this exami- [illegible]

Services of the more important Powers; and (c) the laws and customs of war, so far as they relate to the sick and wounded. 4. A tactical problem in field medical administration.

PAY.

The following shall be the rates of pay, additional pay, and charge pay of the Army Medical Staff and Royal Army Medical Corps, but as the pay warrant is amended from time to time, they are merely quoted for guidance:—

Army Medical Service.	Inclusive of all allowances except field and travelling allowances (yearly).
At Headquarters.	£
Director-General	2000
Deputy Director-General	1500
Assistant Director-General...	850
Deputy Assistant Director-General	750
	Exclusive of allowances (daily).
At Other Stations.	£ s. d.
Surgeon-General	3 0 0
Colonel	2 5 0
Lieutenant-Colonel	1 10 0
Lieutenant-Colonel promoted to the rank after three years as such	1 15 0
Major	1 3 6
After three years as such...	1 6 0
Captain	0 15 6
After seven years' total full-pay service	0 17 0
After ten years' total full pay service	1 1 0
Lieutenant on probation and Lieutenant	0 14 0
Adjutant of the Royal Army Medical Corps (Territorial Force)	The pay of his rank.

A Captain of the Royal Army Medical Corps, holding the brevet rank of Major, shall receive pay at 2*s.* a day, in addition to the rates laid down.

Additional Pay.

[illegible] he Headquarters Staff appointed a member [illegible] 150 a year. An officer under the rank of [illegible] an appointment as specialist, 2*s.* 6*d.* daily.

Charge Pay.

(*a*) An officer in charge of a general or other hospital, or of a division of a general hospital—

	Daily.
	s. *d.*
If in charge of at least 50 beds	2 6
,, ,, 100 ,, ...	5 0
,, ,, 200 ,, ...	7 6
,, ,, 300 ,, ...	10 0
(*b*) Senior medical officer, Royal Arsenal, not exceeding	10 0
(*c*) Officer in command of the Depôt, Royal Army Medical Corps	5 0
(*d*) The Senior officer of the Army Medical Service with an army in the field— A rate to be fixed according to the magnitude of the charge.	
(*e*) In a command abroad— The senior medical officer, if under the substantive rank of colonel, if the number of soldiers is 1500 or upwards	5 0

Reserve of Officers.

An officer of the Royal Army Medical Corps with at least three, but not more than six, years' service may be permitted to become an Army Reserve Officer for a period of seven years, and while so serving he shall receive a retaining fee of £25 a year. With the sanction of the Army Council such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

Seconded Officers.

A Lieutenant on probation who at the time of passing the examination for admission to the Royal Army Medical Corps holds, or is about to hold, a resident appointment in a recognised civil hospital may be seconded for the period not exceeding one year during which he holds the appointment. While seconded he shall not receive pay from army funds, but his service shall reckon towards promotion, increase of pay, gratuity, and pension.

PROMOTION.

No promotion of a medical or departmental officer shall be made without the approval of the Secretary of State.

An officer shall be eligible for promotion to the rank of Captain on the completion of three and a half years' service, and to the rank of Major on the completion of 12 years' service, provided that in each case he has previously qualified in such manner as may be prescribed by the Army Council.

Promotion to the rank of Lieutenant-Colonel to complete an establishment shall be made by selec[illegible] such manner as may be prescri[illegible]

If an officer has passed with [illegible] for promotion to the rank of Major, the period of service required to render him eligible for that rank may be reduced as follows:—

	Months.
If he obtained a "special certificate"	18
,, passed in the 1st Class	12
,, ,, ,, 2nd ,, ...	6
,, ,, ,, 3rd ,, ...	3

Promotion to the rank of Colonel to complete an establishment shall be made by selection from Lieutenant-Colonels. A Lieutenant-Colonel may also be promoted to the rank of Colonel if specially recommended for distinguished service in the field. Promotion to the rank of Surgeon-General shall be made by selection from Colonels. A Colonel may also be promoted to the rank of Surgeon-General for distinguished service in the field. An officer of the Royal Army Medical Corps is eligible for promotion to brevet rank. A Captain after at least 6 years' service, a Major or Lieutenant-Colonel, may be promoted to the next higher rank by brevet for distinguished service in the field or for meritorious or distinguished service of an exceptional nature other than in the field. If the officer dies before the date on which the notification of his promotion for distinguished service in the field appears in the *London Gazette* the promotion shall bear the date which it would have borne had the officer not died. Distinction in original investigation or research may, in the case of officers of the Royal Army Medical Corps, be regarded as "distinguished service of an exceptional nature other than in the field." An officer who may in the opinion of the Army Council have been prevented, in very special circumstances, from qualifying for promotion, or who, having failed to qualify, may have been debarred from further opportunity of qualifying, may be provisionally promoted. If, however, he fails to qualify on the first available opportunity his promotion shall be cancelled and he shall be retired from the service. An officer shall reckon towards his promotion any time, not exceeding one year, during which he may have been on half-pay on account of ill-health caused by military service; and also any time not exceeding two years during which he may have been on half-pay on reduction. An officer while seconded shall continue to be eligible for selection for promotion as if he had remained on the establishment, and his service while seconded shall reckon towards such promotion.

RANK.

The Director-General of the Army Medical Service shall hold the substantive rank of Surgeon-General and shall rank in relation to combatant officers as a Lieutenant General if recommended by the Army Council. All other Surgeon-Generals shall rank as Major-Generals in relation to combatant officers.

RETIREMENT.

(*a*) *Voluntary Retirement.*

An officer of the Army Medical Service will be permitted to retire in cases in which such retirement may be deemed expedient by the Secretary of State.

Scale of Retired Pay.

	Yearly.
	£
Director-General after 3 years' service in the appointment (with 30 years' service)	1125
Under 3 years' service as Director-General and after not less than 30 years' service	875
	Daily.
	£ s. d.
Surgeon-General	2 0 0
Colonel—	
Under 4 years' service as such, but with 30 years' total service	1 10 0
After 4 years' service as such	1 15 0
If not qualified as above	the rate for a lieutenant-colonel.
Surgeon-Lieutenant-Colonel of the Household Troops—	£ s. d.
After 20 years' service	1 0 0
,, 25 ,, ...	1 2 6
,, 30 ,, ...	1 5 0
Lieutenant-Colonel—	
After 20 years' service	1 0 0
,, 25 ,, ...	1 2 6
,, 28 ,, ...	1 7 6
Major, or Surgeon-Major of the Household Troops—	
After 20 years' service	1 0 0
	Gratuity.
	£
Major, or Captain, or Surgeon-Captain of Household Cavalry—	
After 5 years' service in the rank of captain	1000
,, 3 ,, ,, major	1800
,, 6 ,, ,, ,, ...	2500
Surgeon-Lieutenant Colonel or Surgeon-Major of the Household Troops—	
After 15 years' service...	1800
,, 18 ,, ...	2500

Except in the case of a Colonel, or a Lieutenant-Colonel, an officer of the Army Medical Service, who, on voluntary retirement, has served for less than three years in the rank from which he retires, shall be entitled only to the gratuity or retired pay assigned to the next lower rank.

(*b*) *Retirement on Account of Age or Limitation of Period of Service.*

The Director-General of the Army Medical Service shall, unless his service has been specially extended, retire on completion of the term of his appointment, and the retirement of other officers of the Army Medical Service (except Quartermasters) shall be compulsory at the following ages: Surgeon-General, 60; Colonel, 57; and other officers, 55. A Major shall retire on completion of 25 years' service if he has been superseded for promotion; or, if he fails to qualify for promotion, on completion of 20 years' service. It shall be competent to the Secretary of State to place a medical officer on the retired list after 30 years' service.

(*c*) *Retirement on Account of Medical Unfitness.*

An officer placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

An officer, whether on full pay or half pay, who, to the satisfaction of the regulated medical authority has been pronounced insane, shall be retired from the Army.

The scale of retired pay on account of age or medical unfitness is the same as under voluntary retirement, except that the condition of three years' service in the rank is omitted.

Rates for Officers not qualified for Retired Pay on Voluntary Retirement.

If the unfitness was caused by military service retired pay equal to the half pay of his rank. If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half pay of his rank for such period only, not exceeding five years from the date of the officer's retirement from the Army, after five years on half pay under Article 435, as the Army Council shall determine according to the merits of the case.

KING'S HONORARY PHYSICIANS AND HONORARY SURGEONS.

[illegible] retirement.

MEDICAL OFFICERS OF THE REGIMENTS OF HOUSEHOLD TROOPS.

[illegible]

PROMOTION.

Household Cavalry.

[illegible] a vacancy occurring for such promotion.

A Surgeon-Lieutenant, Surgeon-Captain, or Surgeon-Major of the Household Cavalry may be promoted for distinguished service in the field under the conditions laid down in Article 296.

PAY.

	Daily. £	s.	d.
Surgeon-Lieutenant-Colonel	1	10	0
Surgeon-Major	1	3	6
After three years' service as such	1	6	0
Surgeon-Captain...	0	15	6
After seven years' service	0	17	0
After ten years' service	1	1	0
Surgeon Lieutenant	0	14	0

PROMOTION.

A medical officer of the Household Troops shall be eligible for extra pay under the provisions of Articles 319 and 320.

GENERAL REGULATIONS.

In all matters not provided for by Articles 329 to 334 and 547 to 552 the medical officers of the Household Troops shall be governed by the general regulations for regimental officers of the army.

EXCHANGES AND TRANSFERS.

An officer of the Royal Army Medical Corps shall be permitted to exchange with another officer of such corps, or with a medical officer of the Household Troops, under such conditions and regulations as [illegible] placed for seniority next below [illegible] ave the same date as his own; [illegible] laced for seniority below all [illegible] the time of his transfer and [illegible] next above him has been promoted.

An officer of the Royal Army Medical Corps who has exchanged or been transferred from the Indian Army shall reckon, subject to the conditions of Article 316, his previous service with the said forces towards promotion, increase of pay, gratuity, and pension.

LEAVE OF ABSENCE.

[illegible] exhausted or exceeded in consequence of sickness no further pay during ordinary leave shall remain due.

SICK LEAVE.

An officer of the Army Medical Service may be allowed full pay [illegible] on the same conditions as those laid down [illegible] shall not be included in the period of absence on leave to which the issue of pay is limited by Article 423, provided the general officer commanding at the station considers that the circumstances of the case warrant such a concession. Any excess of such leave of absence on account of sickness at an officer's station beyond the period of 30 days shall come under the provisions of Article 425.

SERVICE ON THE WEST COAST OF AFRICA.

An officer volunteering for, or ordered to, the West Coast of Africa [illegible] it, and for [illegible] ve, or on [illegible] the West [illegible] for every [illegible]

WIDOWS' PENSIONS.

Widows' pensions and compassionate allowances for children and other relatives of deceased officer [illegible] specified in the Royal Warrant for [illegible] an Army Medical Officers' Widows' [illegible] assurance principles.

PAY IN INDIA.

There has been an improvement of late years in the pay and conditions of service of army medical officers in India, as elsewhere. The pay of a lieutenant is 420 rupees per mensem, but it is rarely, if ever, that a medical officer proceeds to India until he has attained captain's rank, the pay is then from 475 rupees to commence with, increasing to 530 rupees after seven, and to 650 rupees after ten years' service. Majors receive 789 rupees on promotion and 826 rupees after 15 years' service. Lieutenant-Colonels, 1150 rupees. In addition, charge pay is given, ranging from 60 to 240 rupees according to the size of the hospital. There are also various specialist appointments, carrying extra pay, that are shared between the Royal Army Medical Corps and the Indian Medical Service. It may be said that a bachelor can live quite comfortably on 500 rupees and a married man on 700 to 800 rupees. The purchasing power of the rupee is not what it was 20 years ago, but, on the other hand, many of the ordinary necessities of life are in India cheaper than at home.

INDIAN MEDICAL SERVICE.

The grades of officers in the Indian Medical Service are the same as those of the Army Medical Service and Royal Army Medical Corps. The Director-General will rank either as Major-General or Lieutenant-General as may be decided in each case by the Secretary of State for India in Council.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR ADMISSION TO THE INDIAN MEDICAL SERVICE.

Candidates must be natural born subjects of His Majesty, of European or East Indian descent, between 21 and 28 years of age at the date of the examination, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They [illegible] Secretary, India [illegible] date fixed in the [illegible] ccording to the annexed form.

Declaration and Schedule of Qualifications to be Filled up by Candidates.

1. Name in full... ... ...
2. Address. (*Any alteration to be notified to the Military Secretary,* [illegible] ....
3. [illegible] ....
4. Profession or occupation of father, and whether, at the time of candidate's birth, his father was a British subject of European or East Indian descent... ... ...
5. Statement as to whether the candidate is married or single ... .
6. Colleges and Medical Schools at which the candidate has received his medical education ... ...

7. Medical School in which the candidate completed his course as a medical student, and name of the Dean or other responsible authority ... ...
8. Degrees of B.A. or M.A.; details as to any prizes, university honours, &c. ... ...
9. Registrable qualifications ... ...
10. Date of examination at which the candidate proposes to present himself ... ...
11. Date of any previous occasions on which the candidate may have presented himself for examination for admission to the Indian Medical Service, or other examination for the Public Services... ... ...
12. Particulars of any commission or appointment held in the Public Services... ... ...

I, ..., a candidate for employment in His Majesty's Indian Medical Service, do hereby attest my readiness to engage for that service, and to proceed on duty immediately on being gazetted.

I declare that I labour under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer.

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief.

I inclose, in accordance with Paragraph 4 of the Regulations, (*a*) proof of age; (*b*) two certificates of character; (*c*) certificate of having attended a course of ophthalmic instruction, showing that the course included instruction in errors of refraction; (*d*) evidence of a registrable qualification; (*e*) *in case of natives of India or others educated in that country only*, a certificate from the Director-General, Indian Medical Service

Signature ....
Date ...., 19 .

Candidates for the Indian Medical Service may, if they like, undergo a preliminary examination by the Medical Board which meets at the India Office every Tuesday by applying to the Under Secretary of State, India Office, inclosing a fee of two guineas. They must pay their own travelling expenses. The decision must be understood, however, not to be final. It may be reversed in either direction by the Examining Medical Board immediately prior to the Professional Examination.

The declaration must be accompanied by the following documents:—*a*. *Proof of age* either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form for which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless. *b* A recommendation and certificate of moral character from two responsible persons—not members of his own family—to the effect that he is of regular and steady habits and likely in every respect to prove creditable to the service if admitted. *c*. A certificate of having attended a course of instruction *for not less than three months at an ophthalmic hospital or the ophthalmic department of a general hospital*, which course shall include instruction in the errors of refraction. *d*. Some evidence of having obtained a registrable qualification. *e*. Any European educated in India and every native of that country will be required to produce a certificate signed by the Director-General, Indian Medical Service, that he is a suitable person to hold a commission in the Indian Medical Service.

The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service

The physical fitness of each candidate will be determined by a Board of Medical Officers who are required to certify that his vision is sufficiently good to enable him to pass the tests laid down by the regulations. Every candidate must also be free from all organic disease and from constitutional weakness or other disability likely to unfit him for military service in India. The standard of eyesight is the same as for the Royal Army Medical Corps (omitting the third regulation, but with the addition that inability to distinguish the principal colours may cause rejection) and the physical examination is in all respects the same (see under Royal Army Medical Corps). Candidates who pass the physical examination will be required to pay a fee of £1 before being permitted to compete. No candidate will be permitted to compete more than three times. More detailed regulations as to the physical requirements can be obtained on application to the India Office. Candidates may, if they wish, have a preliminary medical examination at the India Office on application and payment of 2 guineas.

On proving possession of the foregoing qualifications the candidate will be examined by the Examining Board in the following subjects and the highest number of marks attainable will be distributed as follows:—

	Marks.
1. Medicine, including therapeutics...	1200
2. Surgery, including diseases of the eye	1200
3. Applied anatomy and physiology...	600
4. Pathology and bacteriology	900
5. Midwifery and diseases of women and children	600
6. Materia medica, pharmacology, and toxicology	600

N.B.—The examination in medicine and surgery will be in part practical and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. No syllabus is issued in the subjects of pharmacology and toxicology, but the examination will be conducted so as to test the general knowledge of the candidate. No candidate shall be considered eligible who shall not have obtained at least *one third* of the marks obtainable in each of the above subjects and *one half* of the aggregate marks for all the subjects.

For the clinical examinations each candidate should provide himself with notebook, pencil, stethoscope, and ophthalmoscope. In drawing up reports on cases the following points should be observed, viz.: (*a*) A brief history of the case as given by patient, including such points in the family or personal history as have a distinct bearing on patient's case. (*b*) A detailed account of [illegible] signs elicited by the candidate's [illegible] noting the absence of any which [illegible] similar case. (*c*) Where there is [illegible] the candidate as to the exact d[illegible] with his reasons for making th[illegible] the case as a whole, pointing out the symptoms which may be considered typical and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

After passing this examination the [illegible] granted about a month's leave and will t[illegible] successive courses of two months each [illegible] Army Medical College, Millbank.

The course at Aldershot will include instruction in (1) internal economy, (2) Indian military law, (3) hospital administration, (4) st[illegible] p reading. [illegible] in (1) hygiene, (2[illegible], and (4) pathology of diseases and injuries incidental to military and tropical service.

From the day on which the result of the examination is announced lieutenants-on-probation will receive an allowance of 14*s.* per diem, with quarters (where quarters are not provided, with the usual allowances of a subaltern in lieu thereof), to cover all costs of maintenance, and he will be required to provide himself with uniform (viz., the regulation undress uniform and mess dress of a *Lieutenant of the Indian Medical Service*, as described in Indian Army Regulations, Vol. VII., with Sam Browne belt).

A lieutenant-on-probation who is granted sick leave before the completion of his course of instruction and final admission to the service will receive pay at the rate of 10*s.* 6*d.* a day for the period of his sick leave.

Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

At the conclusion of the course candidates will be required to pass an examination on the subjects taught during the course of instruction. No candidate may compete more than three times. Candidates will be supplied, on application, with copies of the papers set at the last examination preceding.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations. They will be liable for military employment in any part of India, but in view to future transfers to civil employment, they will stand posted to one of the following civil areas:—(1) Madras and Burma; (2) Bombay with Aden; (3) Upper Provinces—i.e., United Provinces, Punjab, and Central Provinces; and (4) Lower Provinces—i.e., Bengal, and Eastern Bengal and Assam. The allocation of officers [illegible] of employment will be determined upon a consideration [illegible] as far as possible, the candidate's ow[illegible] civil employment, though ordinar[illegible] which they may have been assigned, [illegible] elsewhere according to the exigencies of the service.

At the close of the session those lieutenants-on-probation who have obtained one-third of the possible total of marks and have satisfied the authorities that they possess the necessary skill, knowledge, and character for permanent appointment are recommended for commissions as Lieutenants in the Indian Medical Service.[4]

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[3] In our opinion as long as [illegible] of the Indian Medical Service receive [illegible] ege, the post of Professor of Medicine i[illegible] by a distinguished officer of the Indian [illegible] n officer of the Royal Army Medical Corps who may have had no training as a teacher nor possess any special knowledge of tropical diseases. The lectures on Military Medicine treat of tropical and other diseases to which soldiers are exposed in the course of their service, the mortality and invaliding by disease, in peace and war, at home and abroad, the management of lunatics under the conditions of military service, &c. The lieutenants on-probation of both services attend Queen Alexandra's Military Hospital, Millbank, where they are taught practically the details of the management of patients in a military hospital, and the registration of their diseases, the duties of invaliding, the modes of filling up the regulation statistical returns, and other service documents. No provision for instruction in lunacy has as yet been made in London. While in London the [illegible] both services reside at the R.A.M. College [illegible] ate's commission as lieutenant will bear th[illegible] the examination is announced, but his rank will not be gazetted until he has passed the final examination.

[4] A lieutenant who, within a reasonable period before the date at [illegible] proof of his election [illegible] ital, may be seconded [illegible] e on which he takes [illegible] within three months of passing his final examination and that he holds himself in readiness to sail for India within 14 days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission. In special cases permission may be granted to lieu[illegible] for India, in order to sit for some fur[illegible] ing in England under s[illegible] period beyond two mon[illegible] Medical College unless [illegible] majority of the [illegible] two months, in [illegible] receive pay up t[illegible] day of embarkation for India. Al[illegible] this clause [illegible] sion su[illegible] under of [illegible] th[illegible] appointment Candidates who have been specially employed in consequence of a national

The following is a list of
and Wales.—Lo
Hospital, Guy's
pital, Middlesex
St. Thomas's Ho
Hospital. Birr
Bristol: Royal
brooke's Hospita
mary. Liverpoo
chester: Royal
Oxford: Radcliffe Infirmary.
Hospital. Scotland.—Aberdeen: Royal Infirmary. Dundee: Royal
Infirmary. Glasgow: Royal Infirmary
and Western Royal Victoria Hospital.
Cork: North Dublin: The Adelaide
Hospital, th Jervis Street Hospital,
the Mater 1
pital, the
Vincent's H
Hospital. C

possible, provided with
when such accommoda-
e public expense is pro-
vided by steamer, or a passage allowance granted if pre ferred. A charge for messing during the voyage is made at the rate of 2s. a day. This payment does not include the cost of liquors, which are charged for as extras. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of terminating his course of instruction, or within 14 days of the termination of his hospital appointment if the Secretary of State has permitted him to hold one, will be considered as having forfeited his commission unless special circumstances shall justify a departure from this regulation.

A course of instruction in sanitary methods, rules, and regulations as carried out in Indian cantonments has recently been instituted for young officers of the Indian Medical Service and the Royal Army Medical Corps on first arrival in the country. The nature of the diseases to be combated, the social and religious customs and prejudices of the various races, and the limited resources of money and material make large modifications from European methods necessary. Lieutenants of both services are now posted on arrival either to Rawal Pindi, Poona, Lucknow, or Bangalore for one month for this course, which is carried out under the supervision of the senior medical officer and sanitary officer. The instructors are medical officers nominated by the principal medical officer, India, and demonstrations on various subjects are given by other officers, staff, engineer, and medical. The course consists of demonstrations and inspections in all parts of the lines of British and Indian troops, bazaars, Government dairies, bakeries, slaughter-houses, trade premises of dairymen, bakers, butchers, and aerated water manufacturers and dhobies' houses, market and water-supplies, methods of washing clothes, surface drainage, removal and disposal of sewage and refuse, antimalarial measures, disinfection, cantonment hospitals, control of venereal diseases, plague prevention, methods of hospital administration, &c. The officers under instruction thus have an opportunity of learning something of native customs and are encouraged to learn the vernacular, so as to be less dependent upon their subordinates when first put in responsible positions.

A Lieutenant may be promoted to the rank of Captain on completing three years' full-pay service from the date of first commission, but after completing 18 months' service and before promotion to the rank of Captain he will be required to pass an examination in military law and military medic organisation, the result of which may affect his pron tion. Captains are promoted to the rank of Major after years' full-pay service, but this promotion is accelerated six months in the case of officers who fulfil certain specifi conditions. A Major is promoted to Lieutenant-Colonel completion of of eight years' full-pay service in the ra of Major. All promotions to higher grades are given selection for ability and merit. In case of distinguish service a medical officer may receive special promotic The ages for compulsory retirement are the same as those for the Royal Army Medical Corps. Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay for officers in military employment (officers in civil employment are entitled to higher rates):—After arrival in India, on first appointment, £250 a year; after the commencement of the *tenth year's service* for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £450 a year; after the commencement of the twentieth year's service for pension, £600 a year; and after the commencement of the twenty-fifth year's service for pension, £700 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff salary of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on *temporary* half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving. *Officers of the Administrative grades* may be granted one period of leave not exceeding eight months during their tenure of appointment. Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to 12 months in all. During such leave the ordinary furlough pay will be given with lodging allowances of 4s., 6s., and 8s. a day for Lieutenants, Captains, and field officers respectively. An officer on leave is required to join at once on being recalled to duty unless certified by a medical board as unfit to do so.

PAY AND ALLOWANCES.

Rank.	Unemployed pay.	Grade pay.	Staff pay.	In officiating medical charge of a regiment.	In permanent medical charge of a regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
" after 5 years' service ...	475	450	150	525	600
" after 7 years' service ...	—	500	150	575	650
" after 10 years' service ...	—	550	150	625	700
Major	—	650	150	725	800
" after 3 years' service as Major	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1075	1250
" " after 25 years' service ...	—	900	400	1100	1300
" " specially selected for increased pay	—	1000	400	1200	1400

of less than seven

been fixed at 1s. 4d. the rupee

more than the grade pay of
ination in Hindustani known as

strative appointments and sub-
an Medical Service receive the

	Rs. per mensem.
Colonel, 16 (some in civil employ) from	1500 to 2,00
Surgeon General, 1 @	2200
" 2 @	2500
" (the Director-General I.M.S.) 1 @	3000

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nally filled by an
es, to reckon such
service towards pension.

[illegible] Rs. 60 a month is granted to officers below [illegible] who may be appointed to certain posts. [illegible] grades and in certain special appointments officers are not debarred from taking private practice as long as it does not interfere with their proper duties.

POSTS IN CIVIL EMPLOY.

A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment. The principal appointments, together with the salaries attached to each, are stated in the following table:—

Description of appointment.	Approximate number of appointments in each class.	Salary per mensem. When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Inspectors-General of Civil Hospitals	6	2250-2500	—	—	—
Sanitary Commissioner with Government of India	1	2000-2500	—	—	—
Inspectors-General of Prisons	8	1500-2000	—	—	—
Principals of Medical Colleges	2	1650-1800	1200-1300	—	—
Professorial Appointments	23	1500-1650	1050-1150	800-950	750
Sanitary Commissioners ...	6	1500-1800	—	—	—
Deputy Sanitary Commissioners...	13	1350-1500	900-1000	650-800	600
Bacteriological Appointments	5	1500-1600	1050-1150	700-900	650
Superintendents of Central Lunatic Asylums	6	1400-1550	1050-1150	700-900	650
Superintendents of First Class Central Jails	5	1400-1550	950-1050	700-850	650
Superintendents of Second Class Central Jails	5	1300-1450	850-950	600-750	550
Civil Surgeoncies (First Class)	37	1300-1450	850-950	600-750	550
Civil Surgeoncies (Second Class)	171	1200-1350	750-850	500-650	450
Probationary Chemical Examiner	1	—	—	600-750	550
Officers deputed to plague duty		1450	1000-1100	750-900	700

An allowance of Rs. 100 per mensem is also granted, in addition, to the chief plague medical officers in certain provinces.

There are also six Chemical Examiners with Rs. 800-1650 per mensem and a number of Port Health Officers with Rs. 750-1950 *per mensem*. Other appointments of Resident Surgeons and Physicians at hospitals, &c., are on salaries ranging from Rs. 700 to 1650 per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from Rs. 450 to 1450 per mensem, exclusive of local allowances.

Qualified officers of the Medical Service are also eligible for appointments in the Assay and Mint Departments. The salaries of these appointments are from Rs. 600-2250 per mensem.

TENURE OF OFFICE IN ADMINISTRATIVE GRADES.

The tenure of office of Surgeon-Generals and Colonels is limited to five years. Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade or for employment in the higher grade of Surgeon-General by *promotion thereto*.

Absence on leave in excess of eight months during a five years' tour of duty involves forfeiture of appointment.

Surgeon-Generals and Colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw *in India* an unemployed salary of Rs. 1350 per mensem in the former, and Rs. 1000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:—

—	Surgeon-General. Per diem.	Colonel. Per diem.
	£ s. d.	£ s. d.
After 30 years' service on full pay	2 5 0	1 14 0
" 25 " " "	2 5 0	1 10 0
" 20 " " " or on promotion, should this period of service not be completed...	2 0 0	1 8 0

A Surgeon-General or Colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

RETIRING PENSIONS AND HALF-PAY.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension on completion of the required periods of service:—

After 30 years' service for pension...	£700 per annum + £350 after three years' active employment in India as a Surgeon-General, or + £250 per annum after five [illegible] absence on leave is allowed to count towards actual service in those grades.
" 27½ " " "	£600 per annum.
" 25 " " "	£500 "
" 20 " " "	£400 "
" 17 " " "	£300 "

Service for pension reckons from date of first commission and includes all leave taken under the leave rules.

Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of medical unfitness caused by duty, military or civil.

Officers of the Indian Medical Service are liable after retirement on pension before completing 30 years' service to recall to military duty in case of any great emergency arising up to 55 years of age.

All officers of the rank of Lieutenant-Colonel and Major are placed on the retired list at the age of 55, and all Surgeons-General and Colonels at the age of 60, but the Director-General is allowed to serve until he has attained the age of 62 years. If a Lieutenant-Colonel has been especially selected for increased pay and he attains the age of 55 years before he becomes entitled to the pension of 30 years' service he may be retained until the completion of such service, and in any special case, where it would appear to be for the good of the Service that an officer should continue in employment, he *may be so continued*, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on temporary or permanent half-pay are granted half-pay at the following rates.

—	Rates of Half-pay.* Per diem.	Per annum.
	£ s. d.	£ s. d.
Under 5 years' service	0 6 0	109 10 0
After 5 "	0 8 0	146 0 0
" 10 "	0 10 0	182 10 0
" 15 "	0 13 6	246 7 6
Lieutenant-Colonel, under 3 years' service as such	1 0 0	365 0 0
Lieutenant-Colonel, over 3 years' service as such	1 7 6	501 17 6

* Officers cannot retire *in India* on half-pay.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by service.

INVALID PENSIONS

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half-pay, be granted an Invalid Pension on the following scale:—

	Per annum.
After 16 years' pension service	£272
" 15 " " "	252
" 14 " " "	232
" 13 " " "	212
" 12 " " "	192

WOUND PENSIONS.

Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

The claims to pension of widows and families of officers are treated under the *provisions of* such *Royal Warrant* regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

HONOURS AND REWARDS.

Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious officers are named Honorary Physicians and six are named Honorary Surgeons to His Majesty. On appointment *as Honorary* Physician or Surgeon an officer below the rank of Colonel is promoted to that rank, remaining supernumerary until absorbed.

The Royal Army Medical Corps is at the present time, we believe, a contented service, though the Director-General A.M.S. is excluded from the Army Council, before which he will, however, be summoned whenever his advice and specialist knowledge are required. The relationship of the Director-General to the War Council should be direct and personal. The limitation of the number *of* lieutenant-colonels has, of course, affected adversely some officers who are well worthy of promotion to the highest ranks, and we look to the Director-General to arrange that really deserving officers may not suffer through the introduction of a regulation which would rob the service of officers who have done some of the best work for the Royal Army Medical Corps.

The improvements that have been introduced within the last few years have, however, been so substantial, both as regards emolument and as affecting the professional and military status of medical officers, that it would be ungracious to refrain from acknowledging the generous spirit that has actuated the War Department authorities in their attitude to the medical service. We feel sure that the good results of this are being, and will continue to be, manifested in an improvement in the health and efficiency of the army at large.

In the Indian Medical Service the introduction last year of the increased pension (£600 per annum) after 27½ years' service was an important concession; there is still, however, a block in promotion, administrative rank, which used to come after 26 or 27 years', being now generally deferred until over 30 years' service; limitation of the period of service in administrative rank (as in the army generally) would probably be an improvement. The order that an officer of the Indian Medical Service must refer the question of his fees when above a certain low limit to the civil authority is most objectionable: it might necessitate the violation of professional secrecy and it is professionally degrading. The neglect of the rule that the office of principal medical officer to His Majesty's forces may be held by an officer of the Indian Medical Service is also felt to be a grievance. On the whole it can hardly be said that the Indian service at the present time offers the advantages over the Royal Army Medical Corps, either professional or pecuniary, that it formerly possessed. If the changes foreshadowed in the recent minute of the Secretary of State (see THE LANCET, May 29th, 1909, p. 1537, and July 10th, 1909, p. 91) be carried out, it seems to be inevitable that the status, prospects, and influence of the Indian Medical Service will be affected injuriously. The objections to these proposals are, however, we venture to think, so serious on the grounds of general policy that we abstain from any criticism on their effect on the prospects of the Indian Medical Service; there is, indeed, no concrete proposal to criticise. It is, however, a dangerous thing to introduce a feeling of distrust and uncertainty into any public service; if the duties hitherto performed by the Indian Medical Service are in future to be shared with other medical men not of that service, then the privileges and emoluments of the Indian Medical Service will inevitably be diminished, with the natural result that men of the highest class will come forward in fewer numbers to compete for the service, and the service generally will deteriorate. Such a result would be disastrous.

PUBLIC HEALTH AND TROPICAL MEDICINE.

INSTRUCTION FOR DIPLOMAS IN STATE MEDICINE.

THE following resolutions, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," were adopted by the General Medical Council from 1902 to 1905. The regulations require that—"(1) A period of not less than twelve months shall elapse between the attainment of a registrable qualification in Medicine, Surgery, and Midwifery and the admission of the candidate to any examination or any part thereof for a diploma in Sanitary Science, Public Health or State Medicine; (2) every candidate shall produce evidence of having attended, after obtaining a registrable qualification, during a period of six months, practical instruction in a laboratory, British or foreign, approved of by the body granting the diploma and in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught; (3) every candidate shall produce evidence that, after having obtained a [illegible]trable qualification, he has for six months (of whic[illegible] least three months shall be distinct and separate fro[illegible] period of laboratory instruction) practically studied the duties, routine and special, of Public Health administration either under a whole-time medical officer of health or a medical officer of health who is also a teacher in public health in a recognised school, or in England and Wales under the medical officer of health of a county or of a single sanitary district of 50,000, or in one or more districts of 30,000 in Scotland or Ireland, or under a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command recognised by the General Medical Council, provided that the six months may be reduced to three if a candidate produces evidence that after obtaining a registrable qualification he has for three months attended a course of recognised instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on Public Health administration; (4) every candidate shall produce evidence that after having obtained a registrable qualification he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (5) the examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination; (6) the rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890." It was enacted by Section 18 (2) of the Local Government Act [England and Wales], 1888, that after Jan. 1st, 1892, no such appointment (that of medical officer of health) may be made in any county, or in any district or combination of districts with a population of 50,000 or upwards, unless the officer—having, of course, qualifications in Medicine, Surgery, and Midwifery—is registered as the holder of a diploma in Sanitary Science, Public Health, or State Medicine under Section 21 of the Medical Act, 1886, or has during any three consecutive years preceding 1892 been medical officer of a district or combination of districts with a population of 20,000 at least, or has for three years previously to August 13th, 1888, been a medical officer or inspector of the Local Government Board. With the sanction of the Local Government Board the same person may be appointed medical officer for two or more districts.

The regulations in question as to study may be procured at the office of the General Medical Council in London.

University of London.—Sanitary Science is included under the head of State Medicine in the M.D. degree, and a certificate has to be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' instruction in public health administration under the supervision of a medical officer of health, and three months' attendance on the practice of a hospital for infectious diseases.

University of Oxford.—An examination, conducted partly in writing, partly *vivâ voce*, and in each subject partly practical, is held in Michaelmas Term in the following subjects:—General Hygiene, General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The examination is in two parts, which may be taken together or separately; but Part I. must be passed either before or at the same examination as Part II. The fee for admission to the examination is £5 for each part. Successful candidates are entitled to receive the Diploma in Public Health. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of registrable qualification and the time when he presents himself for either part of the examination; (2) he produce evidence of having, after obtaining a registrable qualification, attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more [illegible] approved by the Syndicate, of practical laboratory [illegible]y, Bacteriology, and the Pathology of [illegible]ls that are transmissible to man; and

London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London; University College, London; the Royal Army Medical College, London; the Victoria University of Manchester; the University of Durham Medical School, Newcastle-on-Tyne; University of Birmingham; University of Liverpool; St. Mary's Hospital Medical College; Charing Cross Hospital College; Westminster Hospital Medical School; University College, Bristol; the University of Leeds; Guy's Hospital Medical School; St. Mungo's College, Glasgow; Edinburgh University; Middlesex Hospital Medical School; Royal Southern Hospital, Liverpool; Royal Colleges, Edinburgh; Surgeons' Hall, Edinburgh; Trinity College, Dublin; Queen's College, Belfast; St. Thomas's Hospital Medical School; University College, Cardiff; University College, Sheffield; Medical School, Catholic University, Dublin; St. George's Hospital Medical School; University of Glasgow; University of Aberdeen; Anderson's College, Glasgow; the Royal Institute of Public Health; the Royal College of Surgeons in Ireland; the Government Bacteriological Laboratory, Hong-Kong; and North-East London Post-Graduate College.

University of Durham.—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor in Hygiene (B.Hy.) must be at least twenty-two years of age, registered, and a graduate in Medicine of a recognised university, and at least twelve months shall have elapsed after the date when the candidates obtained their first registrable qualification in Medicine, Surgery, and Midwifery before presenting themselves for examination. They shall spend six months at Newcastle-upon-Tyne studying Comparative Pathology, Practical Bacteriology, Outdoor Sanitary Work, Infectious Diseases, Sanitary Chemistry, and Physics. They have to pass an examination in Sanitary Chemistry, Physics, Comparative Pathology, Sanitary Legislation, Vital Statistics, Nosology, Climatology, Meteorology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B.Hy. is 10 guineas and for the degree £6 6*s*. The examination is divided into two parts and candidates may present themselves for either part or both together at their option. Candidates for the degree of Doctor of Hygiene (D.Hy.) must have acquired the degree of Bachelor in Hygiene, must for two years subsequently have been engaged in practice as a medical officer of health, and must write an essay upon some practical hygienic subject. The fee for the examination for the degree of D.Hy. is £5 and for the degree £6 6*s*. The regulation for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor of Hygiene, except that the candidate is not required to be a graduate in Medicine of a recognised University and the course of study need not be passed at Newcastle-upon-Tyne. The fee for the examination and Diploma in Public Health is 10 guineas.

Victoria University of Manchester.—An examination in Public Health is held twice yearly under the following regulations: The examination is in two parts and is written, oral, and practical. Candidates before entering for either part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates of having attended courses of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; of having attended, after obtaining a registrable qualification, during at least six months, practical instruction in a laboratory approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; of having, after obtaining a registrable qualification, attended for three months the clinical practice of an approved hospital for infectious diseases; of having, after obtaining a registrable qualification, practically studied the duties of outdoor sanitary work for not less than six months under the medical officer of health of a county or of a large urban district. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be admitted to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. The fee for each part is £5 5*s*. and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health. The examinations will begin about the end of March and the middle of July in each year.

University of Birmingham.—The University grants a degree of B.Sc. in Public Health and also a Diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University and they must, in addition, have attended a three months' course of Geology in the University. The following are the regulations for Diploma in Public Health (general conditions):—1. All candidates must be registered under the Medical Act. 2. The examinations will be held in the months of March and June and will consist of two parts. No candidate will be allowed to pass Part II. until he has passed Part I. 3. Candidates may enter for Parts I. and II. separately or at the same time. 4. The examination in each part will be written, oral, and practical. 5. Candidates intending to present themselves for either part of the examination must give notice in writing to the registrar of the University on the date prescribed in the calendar. 6. The fee for each part of the examination is £5. The conditions of admission to the examinations are identical with those recently approved by the General Medical Council.

Officers of the Royal Army Medical Corps who have studied Chemistry and Bacteriology at the Staff College and pursued the further course of study approved by the General Medical Council in December, 1902, will be admitted to the Examination for the Diploma in Public Health, whether they have previously been students of the Birmingham School or not.

University of Liverpool.—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The curriculum for the D.P.H. Examination demands (1) a six months' course of practical instruction in Sanitary Science; (2) a six months' course of laboratory instruction in Chemistry and Bacteriology; and (3) practical instruction in Infectious Diseases. Fees.—Chemistry, £5 5*s*.; Bacteriology, £5 5*s*.; Practical Sanitation, £15; Infectious Diseases, £3 3*s*. The courses may be taken out at any time and students are allowed to work daily in the laboratories.

University of Leeds.—The University grants a Diploma in Public Health and every facility is afforded for training in Sanitary Science and State Medicine. The examination, which is held twice in each year—namely, in July and December—is in two parts, and is written, oral, and practical. Candidates, before entering for the first part of the examination, must have held for not less than 12 months a registrable qualification in Medicine, Surgery, and Midwifery and must present satisfactory certificates (1) of having attended an approved course of instruction in Public Health in the University, or in a college or medical school recognised for this purpose by the University; (2) of having attended, after obtaining a registrable qualification, during at least six months practical instruction in laboratories approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man. Candidates before entering the second part of the examination must present certificates (3) of having, after obtaining a registrable qualification, attended during not less than three months the clinical and administrative practice of a hospital for infectious diseases approved by the University; (4) of having, after obtaining a registrable qualification, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under 2), been diligently engaged in acquiring a knowledge of the duties, routine and special, of Public Health administration under the supervision of (*a*) the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or (*b*) a medical officer of health devoting his whole time to Public Health work, or (*c*) a medical officer of health who is also a teacher in the Department of Public Health of a recognised medical school, or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, district, or command recognised for the purpose by the General Medical Council, *or* of having attended during three months as required [illegible] g a registrable [illegible] rses of instruc- [illegible] ts bearing on [illegible] may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be allowed to pass in Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination. Fees—The fee for each part is £5 5*s*., and must be paid at least 14 days before the commencement of the examination. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination and [illegible] will receive a Diploma in Public Heal[illegible] registered or entitled to be regis[illegible] 1890, may be exempted from producing the above required certificates of study.

University of Sheffield.—This University grants a Diploma in Public Health and courses of instruction have been arranged for it. These qualify for the Cambridge University Diploma, for that given by the Conjoint Board of England, and for the degree of M.D. in State Medicine of the University of London.

University of Edinburgh.—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh, viz., Bachelor of Science in Public Health and Doctor of Science in Public Health. Candidates for the degree of B.Sc. in Public Health must be graduates in Medicine of a University of the United Kingdom, or of some other University recognised for the purpose, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least 20 hours per week during a *period of not less than eight months*, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University; they must also have attended courses of instruction in Physics and Geology in some Scottish University. Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than 18 months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health *in some University of the United Kingdom* or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of 40 lectures at least; one of which courses shall deal with medicine and the other with engineering, each in its relation to public health. They must also give evidence that, subsequent to graduation in medicine, (1) they have during three months, which must be separate and distinct from the period of laboratory instruction, been diligently engaged in acquiring a practical knowledge of the duties, routine and [illegible] staff officer of the Royal Army Medical Corps, having charge of an army corps, district, or command, recognised *for this* purpose by the General Medical Council; (2) that they have attended during three months the practice of a hospital for infectious disease, at which opportunities are afforded for the study of methods of administration; and (3) that they have had three months' instruction in mensuration and drawing. The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics. Graduates who have held the degree of B.Sc. in Public Health from the University of Edinburgh for a term of five years *may offer themselves for the* degree of D.Sc. in Public Health in that University. They must then present a Thesis and pass an examination in Public Health. The fees are £3 3*s*. for the First and £3 3*s* for the Second B.Sc. Examinations, and *£10 10s. for the* degree of D.Sc.

University of Aberdeen.—The Diploma in Public Health (D.P.H.) *is conferred* only on graduates in Medicine of a University in the United Kingdom; and a period of not less than 12 months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having during six months (whereof three months must be distinct from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the medical officer of health of a county or large urban district. He must have regularly attended for three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. He must also have obtained practical instruction in the drawing and interpretation of plans. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s*. The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

National University of Ireland.—The regulations for the Diploma in Public Health of the National University of Ireland *have not yet been published, but as a guide to their* probable form we print a summary of those of the expiring Royal University. Candidates are not admitted to this examination until the lapse of 12 months from the time of their graduation. Candidates are required to produce a certificate of having, after obtaining the degrees of M.B., B.Ch., B.A.O., attended six months' practical instruction in a laboratory approved by the University, and also of having for six months practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, and also *of having attended for a period of three months the* practice of a hospital for infectious diseases. Candidates at this examination must answer in the following subjects: (1) *Physics*, (2) *Chemistry*, (3) Meteorology, (4) Sanitary Engineering and Architecture, (5) Bacteriology, and (6) Hygiene, Sanitary Law, and Vital Statistics.

University of Dublin.—The Diploma in Public Health is conferred, after examination, on the following conditions. The candidate must be a Doctor in Medicine or a graduate in Medicine, Surgery, and Midwifery of Dublin, Oxford, or Cambridge. The candidate must have obtained a registrable qualification at least 12 months before the examination. The candidate must have completed (unless registered as a practitioner on or before Jan. 1st, 1890), subsequently to *obtaining a registrable qualification, six months' practical* instruction in a chemical and bacteriological laboratory or laboratories approved by the University, must have studied practically outdoor sanitary work for six months under an approved officer of health (*at least three months of this* period being distinct from the time spent in laboratory wor[illegible] whe[illegible] of [illegible] Par[illegible] (inc[illegible] and [illegible] Vital [illegible] ing and Reports.

Queen's University, Belfast.—A Diploma in Public Health is given by examination to every candidate who must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diplomas, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.[5] He

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[5] [illegible] of six months may be reduced to a period [illegible]

First Professional Examination on production of the required certificates. The Examination consists of Mechanical Dentistry and Dental Metallurgy, the examination in Dental Metallurgy being by written paper. III. The Second Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; (*e*) a course of not less than five lectures on the Surgery of the Mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery; (*f*) a course of Dental Materia Medica; and (*g*) a course of Dental Bacteriology. 3. Of having attended at a recognised dental hospital or in the dental department of a recognised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. The lectures on Surgery and Medicine must be attended after the completion of the courses of lectures on Anatomy and Physiology. 5. Of having performed Dissections at a recognised medical school during not less than 12 months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery for twelve months during the ordinary sessions. 7. Of being 21 years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. All students joining the Dental Hospitals after Oct. 1st, 1909, will be required to attend a course of practical instruction in the anæsthetics in common use in the practice of Dental Surgery. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of: Part I., General Anatomy and Physiology, General Surgery and Pathology; Part II., Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination in Part I. comprises General Anatomy and Physiology, General Pathology and Surgery, and in Part II., Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries and may be required to prepare and fill cavities or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Candidates may take the two parts of the examination together or separately. Candidates must pass Part I. before proceeding to Part II. If they fail in Part I. they are not allowed to proceed with Part II. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination for any degree or qualification in medicine or surgery registrable under the Medical Act of 1886. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and Universities above mentioned. The fee for the diploma is 20 guineas and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional Examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March, or April, July, and October in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give 21 clear days' notice of their intention to present themselves for examination.

Royal College of Surgeons, Edinburgh.—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. D. L. Eadie, Clerk to the Royal College of Surgeons, at 54, George-square, Edinburgh. Students who commenced their professional education by apprenticeship or attendance on lectures before July 22nd, 1878, are exempt from the Preliminary Examinations. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, with Laboratory Instruction, one course of six months; Physics, with Laboratory Instruction, three months; Physiology, with Laboratory Instruction, one course of six months; Surgery, including Surgical Pathology, one course of six months; Medicine, including Medical Pathology, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction on Surgery and Medicine, twelve months. These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), with Practical Dental Histology, three months; Dental Surgery and Pathology (not less than 20 lectures), with the Materia Medica and Therapeutics applicable to Dental Surgery, three months; Dental Mechanics (not less than 12 lectures), Theoretical and Practical, with Dental Metallurgy, three months—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Practical instruction in Mechanical Dentistry from a registered Dentist, or in the Mechanical Department of a recognised dental hospital and school, as apprentices or otherwise, either before or after registration, for *three* years. Certificates of attendance on such of these courses as may be respectively required will entitle candidates to appear either for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the courses on Anatomy, Physiology, Chemistry, and Physics. The examination embraces Anatomy, Physiology, Chemistry, and Physics. The fee is £5 5*s.*, for re-entry £3 3*s.* Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is 21 years of age, and must pay a fee of £10 10*s.*, for re-entry £5 5*s.* The examination embraces Surgery, Medicine, Therapeutics, and the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, and Dental Mechanics with Dental Metallurgy, with a Practical Examination. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations will, before being admitted to the Second *Dental Examination*, be *required to pay the total fee* of £15 15*s*. payable for the dental diploma. Fees and schedules must be lodged not later than *one week* before the examination with Mr. D. L. Eadie, 54, George-square, Edinburgh, Clerk to the College.

[illegible] *Surgeons of Glasgow.*—The [illegible] curriculum, number, and [illegible] &c., are in effect similar [illegible] of Surgeons of Edinburgh, but embrace Dental Bacteriology. Special provision is made for candidates who intend to qualify both in Medicine and in Dentistry. Candidates can enter for the First Examination in three divisions, the first embracing Physics and Chemistry, the second Dental Metallurgy and Dental Mechanics and the third Anatomy and Physiology. There is at the Final Examination an examination in Practical Dentistry conducted in a dental hospital.

Royal College of Surgeons in Ireland.—Candidates for the Licence in Dental Surgery *are required* to pass two professional examinations, and to produce the following certificates before admission to the several examinations :—

First Dental Examination.—(A) Of having attended courses of instruction in the following subjects at an institution recognised for the purpose : (*a*) Practical Chemistry, including Metallurgy (three months) ; (*b*) Physics, Theoretical and Practical (six months). The courses for these certificates need not be completed within one year, nor need they run concurrently ; and they may be commenced or attended before the candidate registers as a medical or dental student. (B) 1. Of having passed a recognised Preliminary Examination in general education, and of having been registered as a medical or dental student by the General Medical Council. 2. Of having, subsequently to registration as a dental or medical student, attended courses of instruction in the following subjects at a recognised school of medicine : (*a*) Dissections with Demonstrations (the candidates must dissect the head and neck three times) (12 months). (*b*) Physiology, including Dental Physiology. Lectures (six months). (*c*) Practical Physiology and Histology, including Dental Physiology and Histology, Human and Comparative (three months).

Final Dental Examination.—1. Of having been engaged during a period of two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist, or under the direction of the superintendent of the Mechanical Depart[illegible] Dental Hospital where the arrange[illegible] Dentistry are satisfactory to [illegible] This instruction may be commenced or attended before the candidate registers as a medical or dental student. 2. Of having passed the First Dental Examination. 3. Of having attended, at institutions recognised by the College for the purpose, the following [illegible] Mechanics. Lectures. Two courses. (*c*) Dental Anatomy. Lectures. One course. (*d*) The practice of a Dental Hospital, or of the Dental Department of a General Hospital. Two years. 4. Of having attended Clinical instructions at a recognised General Hospital during the ordinary teaching sessions (nine months). 5. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a medical or dental student. One year's *bonâ fide* apprenticeship with a registered dental practitioner, after being registered as a medical or dental student, may be counted as one of the four years of professional study. 6. Of being 21 years of age.

In the First [illegible] dates will be examined in (A) [illegible] ding Practical Chemistry and [illegible] hysiology, and Histology—Gen [illegible] ibjects may be passed at the same time, or they may be passed in two groups, (A) and (B). Before presenting themselves for examination in either group, candidates must have attended the required courses of instruction in the subjects of the group for which they present themselves. The examination is partly written, partly *vivâ voce*, and partly practical.

In the Final Dental Examination candidates will be examined in General Pathology, Medicine, and Surgery; Dental Surgery, and Dental Pathology, with the Materia Medica and Therapeutics applicable to Dental Surgery; Dental Mechanics and Metallurgy; Orthodontia. Candidates must pass in all the subjects at one examination. The examination is partly written, partly *vivâ voce*, and partly practical, and includes the examination of patients and the performance of dental operations. Candidates are required to provide their own instruments and gold for filling. The First Dental Examination will commence on the first Mondays in the months of February, May, and November. The Final Dental Examination will commence on the second Mondays in the months of February, May, and November. The fee for the *Diploma in Dental Surgery is* 20 guineas, and is payable in the following manner, viz., F[illegible] each admission, £3 3*s*. ; F[illegible] Final, each admission, £[illegible] ant of Diploma, £8 8*s*. ; total, £21. Fees will not be refunded *under any circumstances*. Candidates must pay the fees for examinations from which they are exempted, unless when such exemptions have been granted in virtue of examinations passed before the Conjoint Board in Ireland.

University of Birmingham.—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that the students may fully qualify themselves for the Dental diploma of this and other universities and licensing bodies. There is a special and well-equipped Dental Museum and Laboratory. An Entrance Exhibition, value £37 10*s*., is awarded annually at the commencement of the winter session. The following are the regulations for Degrees in Dentistry :—1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required *from* candidates *for* Medical Degrees. 3. The *degree of Bachelor of Dental Surgery is not conferred* upon any candidate who has not obtained a Licence in Dental Surgery. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing [illegible] Of this [illegible] departm[illegible] 4. A. [illegible] candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees : (*a*) Chemistry [illegible] tions in each of these subjects : (*f*) One Special Course of Lectures on Medicine, (*g*) One Special Course of Lectures on Surgery, and (*h*) Pathology and Bacteriology. *C.* That he has attended courses and passed the class examinations in : (*k*) Dental Histology and Patho-Histology, (*l*) [illegible] y, and (*m*) Dental Surgery and [illegible] at he has received instruction [illegible] of living cases at the dental department of a general hospital for a period of not less than six months. 5. The Final Examination will deal with the subjects in Classes *C* and *D*. 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the *Dental Advisory Board. The degree will be awarded or withheld* according to the report of these examiners.

The University also grants a diploma in Dental Surgery (L.D.S.) to candidates who have followed the prescribed regulations for the same.

University of Durham.—A Diploma in Dental Surgery is granted. The conditions are as follows :—Every candidate for the Diploma must pass the necessary examination required by the General *Medical Council for registration as* a dental student. There are four Examinations—viz., First, Second, Third, and Final. The subjects of the Examinations are :—*First :* (*a*) Chemistry; and (*b*) Physics. *Second :* (*a*) Dental Mechanics, Theoretical and Practical ; (*b*) Dental Metallurgy ; and (*c*) Dental Materia Medica. *Third :* (*a*)

Patients are admitted between 8.45 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such cases as are suitable for conservative treatment are transferred to the conservation room, taking with them a chart to indicate the treatment required. *The Conservation Room:* This room is open from 9 A.M. till 5 P.M. There are 55 Morrison chairs, each fitted with a saliva ejector, for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. Pupils in Dental Mechanics are received, and a graded, systematic, and full course of instruction, extending over two years, is carried out. The control and supervision of the *Pupils' Laboratory* is in the hands of the following staff: The Demonstrator of Dental Mechanics, Two Staff Demonstrators of Prosthetic Dentistry, Two Skilled Mechanics and their Assistants. Dental students have the opportunity of attending at this hospital the whole course of instruction required by the examining board for the L.D.S. Eng., viz., two years' pupilage in dental mechanics, the special lectures and practice of the Dental Department and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. Two Entrance Scholarships in Dental Mechanics of the value of £20 each are offered for competition annually, one in September and one in April, and prizes of the aggregate value of £47 are awarded for general proficiency and for skill in Practical Dentistry. Dental students are eligible for admission to the Residential College and enjoy the privileges of students in the Medical School.

Staff.—Consulting Dental Surgeon: Mr. F. Newland-Pedley. Dental Surgeons: Mr. W. A. Maggs, Mr. Wynne Rouw, Mr. H. L. Pillin, and Mr. M. F. Hopson. Assistant Dental Surgeons: Mr. J. B. Parfitt and Mr. J. L. Payne. Demonstrators of Practical Dentistry: Mr. E. B. Dowsett, Mr. F. J. Pearce, Mr. H. P. Aubrey, Mr. H. Chapman, and Mr. H. O. Malleson. Demonstrators of Prosthetic Dentistry: Mr. S. W. Charles and Mr. E. A. Tomes. Anæsthetists: Dr. H. F. Lancaster, Mr. C. J. Ogle, Mr. W. M. Mollison, Mr. A. R. Thompson, Mr. R. Davies-Colley, and Dr. F. E Shipway. Lecturers:—Dental Anatomy and Physiology: Mr. Maggs. Dental Surgery and Pathology: Mr. Wynne Rouw. Operative Dental Surgery: Mr. Parfitt. Dental Mechanics: Mr. Payne. Practical Dental Mechanics: Mr. Pillin. Dental Materia Medica: Dr. A. P. Beddard. Dental Bacteriology: Dr. Eyre. Dental Microscopy: Mr. Dowsett and Mr. Kennaway. Metallurgy: Dr. J. Wade. Practical Dental Metallurgy: Mr. Hopson. Curator of Dental Museum: Mr. Dowsett. Dean: Dr. Eason.

London Hospital.—Mr. F. M. Farmer and Mr. J. Scott MacFarlane give practical instruction during the winter and summer sessions daily at 9 A.M. Dental Dressers are appointed every three months. A course of lectures, specially arranged for Medical students, will be delivered during May and June. The lectures will be supplemented by demonstrations of practical work and will be specially directed to meet the requirements of the medical practitioner. They will comprise a short description of the Anatomy and Physiology of the Teeth, special attention being given to Oral Hygiene; Irregularities of the Teeth, with special reference to cases which may be treated by surgical means as distinguished from those requiring dental appliances; Dental Caries and its Treatment, which will be specially directed to palliative dressings and simple fillings; Diseases of the Dental Pulp and Periosteum and their Treatment; and Neuralgia and other Affections arising from dental causes. The practical work will include exercises in the extraction of teeth and the preparation of cavities and simple fillings on models specially prepared. 9366 dental cases were treated during 1908.

PROVINCIAL.

University of Bristol.—Laboratories for instruction in Mechanical Dentistry and in Dental Metallurgy have been established in the University and Dental students can enter for the full curriculum at Bristol. The Lectures are delivered at the University. Practical instruction is given at the *Royal Infirmary* by Mr. Ackland and at the *General Hospital* by Mr. Dowling, both institutions being recognised by the Dental Board of the Royal College of Surgeons of England. Full information may be obtained of the Dean of the Medical Faculty, Professor Edward Fawcett, the University, Bristol.

Devon and Exeter Dental Hospital, 24, Southernhay, West, Exeter.—Established 1880.—The hospital is open daily (Sundays excepted) and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M Ackland; secretary, Mr. W. Alfred Hooker.

SCOTLAND.

The Incorporated Edinburgh Dental Hospital and School.—The Edinburgh Dental Hospital and School is located in a spacious and well-equipped building at 31, Chambers-street and offers special advantages to dental students. The General Courses required for the Dental Diploma may be taken in the Medical School of the Royal Colleges of Physicians and Surgeons or in the University schools. The hospital attendance and clinical instruction are taken at the Royal Infirmary. The University, Medical Schools, and Royal Infirmary are within three minutes' walk of the Dental Hospital. The special courses are taken in the hospital. The Dental Hospital practice, extending over two years, affords a student ample opportunity for a full acquaintance with every branch of dentistry. The hospital admits a limited number of indentured pupils. They receive their instruction in Mechanical Dentistry concurrently with the general and special courses. A premium of 60 guineas is payable with each such pupil. The practice and lectures of the hospital are recognised by, and qualify for, all the Licensing Boards. For the special classes, both theoretical and practical, required by dental students the directors have secured the services of an efficient staff of dental officers and lecturers. There will also be a course of demonstrations in Mechanical Dentistry. Students will receive instruction in Practical Dental Mechanics under the mechanician. The cost of the hospital outfit of instruments is included in the Dental Hospital fee of £31 10*s.* The minimum cost of classes and Diploma for the whole course of dental instruction amounts to £90 7*s.* Those students who desire to take a Medical and Surgical Diploma in addition to the L.D.S. have in this school admirable facilities for so doing. The triple qualification of the Royal College of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow is recommended. The minimum cost of the Professional Education Triple Qualification and Licence in Dental Surgery amounts to £169 7*s.* The mechanical department is large and airy and furnished with all modern tools and appliances. The winter session commences Oct. 1st. The Museum is open to students for study. Further particulars can be obtained from the Dean, Mr. W. Guy.

Incorporated Glasgow Dental Hospital and School, 15, Dalhousie-street, Garnethill, Glasgow.—The winter session will begin in October and the lectures will be delivered as follows. In Dental Mechanics on Tuesday and Thursday at 7 P.M., by Dr. Hugh McKay, and in Dental Metallurgy on Monday and Wednesday at 7, by Mr. W. Bruce Hepburn, L.D.S. Fee for each of the above courses of lectures, £3 3*s.* The lectures and instruction at the Glasgow Dental Hospital and School are recognised by all the licensing bodies in the United Kingdom. The fees for two years' hospital practice are £15 15*s.* Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. The hospital is opened daily from 5 to 7 P.M. (Saturdays excepted). Students may only enrol during the months of April or October. Summer session begins in April.

Glasgow Royal Infirmary (Dental Department).—Mr. Wm. Taylor attends at the Royal Infirmary at 3.30 P.M. on Mondays, Wednesdays, and Fridays, and gives a course of instruction in Dental Surgery on these days. The following course in the curriculum can be taken at

St Mungo's College: Anatomy, six months; Practical [illegible] istry, [illegible] three [illegible] ateria [illegible] Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital. The winter session opens Thursday, Oct. 15th.

ANCILLARY SCIENTIFIC INSTITUTIONS.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, London (with which is incorporated the ROYAL SCHOOL OF MINES, and of which the CITY AND GUILDS COLLEGE is a Constituent College).—Mechanics and Mathematics: Professor J. Perry, F.R.S., and Dr. A. R. Willis. Biology: (Zoology) Professor A. Sedgwick, F.R.S., and Professor J. B. Farmer, M.A., F.R.S. (Botany). Chemistry: Professor Sir Edward Thorpe, F.R.S., Dr. M. O. Forster, F.R.S., Dr. J. C. Philip, M.A., Ph.D., D.Sc., and Dr. G. T. Morgan, D.Sc., A.R.C.S. Physics: Professors H. L. Callendar, F.R.S., the Honourable R. J. Strutt, F.R.S., Dr. W. Watson, F.R.S., and Mr. A. Fowler. Geology: Professor W. W. Watts, F.R.S., and Dr. Cullis. Metallurgy: Professor W. A. Carlyle, M.E., M.I.M.M. Mining: Professor S. H. Cox. The College reopens on Tuesday, *Oct. 5th, 1909.* Communications should be addressed to the Secretary, Imperial College, South Kensington, S.W.

ELECTRICAL STANDARDIZING, TESTING, AND TRAINING INSTITUTION, Faraday House, 62–70, Southampton-row, W.C. —Principal, Hugh Erat Harrison, B.Sc. Lond. Instructor in Mathematics and Physics: Alexander Russell, D.Sc. Glasg., M.A. Cantab. Instructor in Chemistry: Mr. J. Thomas, B.Sc. Lond. Instructor in Mechanical Engineering: Mr. Walter H. Bell, A.M.Inst.C.E. This institution, in addition to its ordinary course of training in electrical engineering, which occupies four years, also arranges for special instruction in all branches of electricity either by private tuition or by a specially arranged course at the College or at the works of the companies with which it is associated. There are Entrance Scholarships of the value of 150 and 100 guineas. Particulars may be obtained on application to the Secretary, Mr. Howard Foulds, Faraday House, Southampton-row, W.C. Session begins Sept. 20th.

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—Chemistry and Physics: Professor Arthur W. Crossley. Botany: Mr. H. J. Jeffery, A.R.C.Sc. Pharmaceutics: Professor Greenish (Dean of the school). The session commences on Wednesday, Sept. 29th, on which day the inaugural address will be delivered by Professor Tschirch of the University of Bern. Medical students, or pupils intending to enter the medical profession, are admitted [illegible] ork in any or all the courses. [illegible] is school are received by the [illegible] Colleges. Application for admission to the school, or for further information, may be made to the Dean, 17, Bloomsbury-square, London, W.C.

ROYAL SANITARY INSTITUTE (WITH WHICH IS INCORPORATED THE PARKES MUSEUM), 90, Buckingham Palace-road, S.W.—The objects of the Royal Sanitary Institute are to promote the advancement of sanitary science in all or any of its branches and to diffuse knowledge relating thereto. It was founded in 1876 and incorporated in 1888. Sessional meetings are held in London and in various provincial centres from time to time for the reading of papers and for discussions upon subjects connected with sanitary science, and lectures and demonstrations are arranged for sanitary officers; in sanitary science as applied to buildings and public works, suitable for foremen of works, builders, and those engaged in the allied trades; for army officers and professional men on food and meat inspection; for meat inspectors; for women health visitors and school nurses; and for school teachers. Examinations *are held in London,* provincial, and colonial centres and certificates of competency in sanitary knowledge are granted. The Parkes Museum, which is maintained by the institute, contains a great variety of the most approved forms of apparatus and appliances relating to health and domestic comfort. Professors and teachers of hygiene are allowed the use of the museum for demonstrations to their students on application to the committee. The museum is open daily from 9.30 A.M. to 5 30 P.M. *and on* Mondays to 8 P.M. and is free of charge except when lectures or meetings are being held. There are also a large library of sanitary literature which contains, in addition to standard works on sanitary science, a collection of reports of medical officers of health over the whole country, and a reading room supplied with the principal sanitary periodicals, both home and foreign. The institute is under the *patronage of the* King, and the officers are: President, the Duke of Northumberland; chairman of council, Mr. H. D. Searles Wood, F.R.I.B.A.; treasurer, Mr. Thomas W. Cutler, F.R.I.B.A.; registrar, Mr. A. Wynter Blyth, M.R.C.S.; and secretary, Mr. E. White Wallis. The lecturers are Dr. C. Porter, Dr. G. F. McCleary, Dr. A. Wellesley Harris, Dr. E. J. Steegmann, Dr. E. Petronell Manby, Professor H. R. Kenwood, M.B., Dr. C. J. Thomas, Dr. H. Meredith Richards, Miss Alice Ravenhill, Colonel J. Lane Notter, R.A.M.C., Mr. J. Osborne Smith, F.R.I.B.A., Mr. W. C. Tyndale, M.Inst C.E., Mr. J. E. Worth, M.Inst. C.E., Mr. J. Wright Clarke, Professor H. Addison Woodruff, F.R.C.V.S., Major J. A. Meredith, F.R.C.V.S., Mr. James King, M.R.C.V.S. For members the annual subscription is £2 2*s.* and for associates £1 1*s.*, but members and associates holding certain qualifications only pay half the ordinary rate of subscription.

THE ROYAL INSTITUTE OF PUBLIC HEALTH.—The Royal Institute of Public Health, 37, Russell-square, W.C., was founded in the year 1886 with the object of obtaining the registration of public health diplomas and the further statutory requirement that all medical officers of health should possess such a qualificat[illegible] members of the Institute, [illegible] decided to create a central [illegible] London and have erected bacteriological, parasitological, and chemical laboratories in which researches of a public-health character are undertaken for municipal and other authorities and for private medical practitioners and the necessary training for obtaining public health diplomas is provided, together with a library, lecture room, and common room. The Royal Institute of Public Health is recognised by the University of London as a public educational institution, and its course of instruction for the diploma by the universities and other examining bodies of the United Kingdom. The Institute is under the patronage of His Majesty the [illegible] Strathcona and Mount Royal [illegible] onsists of—the Principal, [illegible] F.R.S.E.; demonstrator [illegible] demonstrator of bacteriology, Dr. Hermann Dold. Occasional lectures are given by eminent sanitarians. The Harben lecturer for 1909 was Professor R. Pfeiffer, M.D., of Breslau, *and the* Harben lecturer for 1910 is Lieutenant-Colonel W. B. Leishman, R.A.M.C.

THE BRITISH MEDICAL MAN ABROAD.

THE conditions of medical practice have much altered in this country of late, as we have been able to point out in THE LANCET during the past decade. Professional incomes in many places have been lowered seriously by the unfair tactics of so-called medical aid societies, and the position of servant to which some of these associations would reduce their medical officer is one that liberally educated gentlemen do not welcome with enthusiasm. Improvement has taken place recently but *there is yet a time of,* severe struggle ahead. Again the expenses of living have gone up for medical men as they have for all the middle and upper *middle-* classes of this country, while more money is required to secure the necessary medical degrees and diplomas owing to the lengthy curriculum and the more expensive equipment. These facts account, though only partially, for the increased number of medical men who having obtained British medical qualifications desire to settle abroad. Other factors at work *are the spirit of adventure,* the feeling that in a new country there is more elbow-room and more chances of *getting out of the ruck, and the* increased facilities of *transport. Newspapers and books* galore nowadays *make us familiar with life in other lands,* while trains and steamers will take us all over the world in a short time and at a *comparatively small expense.* For *this reason or that,* the number of medical men who make inquiry from us as to their legal and professional position in a foreign country continues to increase, and in the following columns we attempt to give the information.

Speaking generally, our colonies make it easy for medical men from home to practise there, but the same is not the case on the continent, where there is an obvious tendency towards protection. But in the colonies there are not many openings for practice except for those who are willing to "rough" it and work hard. In Canada there are outlying districts where a good start might, perhaps, be obtained; but it must be remembered that Canada possesses advanced medical schools and is a sparsely populated country as yet. In Australia and New Zealand the prospect for the British practitioner is not greater than that which faces him in Great Britain. The medical profession is, in fact, crowded in all places at home and abroad where the circumstances of practice are favourable, and many practitioners who have gone out from the mother country have had to leave the colonies unsuccessful, or have been very hard pushed to make both ends meet. The graduates of the colonial universities every year tend to more than meet the usual vacancies. It used to be generally believed that, even where there was a large supply of general practitioners in the big colonial towns, there would still be good openings for men who have specialised in such branches of practice as the treatment of eye and ear diseases. This is partially true. There are openings of which good men can take advantage. But as a rule the openings in the colonies for new comers are in country districts where the medical man, besides being proficient in every branch of the profession, must be ready to lead a hard life. It is desirable that every colonial practitioner, intending to start in a country district, should be of good physique and not only able to ride but able to take care of his horses.

There are, of course, certain colonial appointments made in this country, particulars of which will be found in our columns. These appointments are sometimes made with permission to practise privately, and sometimes this is not permitted. Candidates for the posts should apply to the Colonial Office for information, and their chances of success will be much increased by having passed through one of the schools of tropical medicine. The duties of colonial medical officers involve medical charge of a district, including as a rule the charge of a hospital and a lunatic asylum. The medical officers also supervise the sanitation of their districts, and as a rule give gratuitous attendance to all Government officials.

The United States of America form a rich and well-populated country to which, as speaking our language, it is natural for the British medical man to desire to go. The regulations for practice in the various States differ much, but it will be found that wherever the social conditions are pleasant and the opportunities for emoluments good there will be plenty of competition. There is an enormous number of medical men in the United States, and the British medical man contemplating starting in medical practice there will be prudent to make full inquiry before deciding on the locality, while his chance of success will be increased by his having some good introductions.

FRANCE.

The law that regulates the conditions of the practice of medicine in France is that of Nov. 30th, 1892, passed by the Senate and the Chamber of Deputies and signed by Carnot, President, and Poincaré, the Minister of Public Instruction, at that date:—

> No one may practise medicine in France unless he hold a diploma of the doctorate of medicine given by the French Government after examinations duly passed in a State institution of higher medical education.

The fifth article of this law specifically refers to foreigners:—

> Physicians who have taken their degree abroad, of whatever nationality, can only practise in France on condition of having obtained in France the degree of doctor of medicine.

This article was modified by a special decree, signed in July, 1893, referring to certain concessions to be made to such foreigners:—

> Physicians with a foreign degree who desire the French degree of doctor of medicine may obtain partial or complete dispensation of medical study and partial exemption from the examinations required In no case will candidates be exempted from more than three examinations. Such exemption is accorded by the Minister of Public Instruction on the recommendation of the competent Faculty and the Committee of Public Education.

While this last quotation may be considered the actual state of the law in the formal sense of the word, further and much less liberal projects have since been considered by the legislative bodies and adopted in the form of *arrêt ministériel*, of *circulaire* issued by the Minister of Public Instruction, or of *décrêt* adopted by Parliament. Presumably too much advantage was taken of the generosity of the concessions of July, 1893, although it must be remembered that the exclusive policy since adopted is by no means aimed at English physicians, but rather against graduates of little-known universities the value of whose qualifications it is difficult to estimate. Be that as it may, in July, 1896, a certain number of exemptions were granted—among whom the writer was fortunate to find himself—and a circular was issued repealing—in substance—the concessions of 1893. No foreign qualifications were to be recognised as deserving of any dispensations and physicians holding foreign degrees and desirous of practising medicine in France were obliged not only to matriculate as medical students but also to produce evidence of having obtained the French diploma of Bachelor in Classical Education (Arts and Philosophy) and the certificate in physical, chemical, and natural science.

The refusal that for the last ten years has almost invariably met the request made by foreign physicians for the right to practise in France is based upon this *arrêt ministériel*. Such requests are answered in the formula—"Depuis 1896, époque à laquelle il y a en une décision du Parlement, il n'est accordé aucune dispense aux étrangers désireux d'obtenir le diplôme d'etat: ils doivent tous produire le baccalauréat." The simplicity and clearness of this statement make translation unnecessary. This exclusive attitude was not, however, wholly maintained. While withdrawing nothing of the exclusiveness of 1896, the Minister could grant leave to foreigners to possess themselves of a formal academic medical degree which, while it entitled the possessor to call himself docteur en médecine de la Faculté de Paris (de Montpelier, Nancy, Bordeaux, Lille, Lyon, or Toulouse), gave him no right whatever to practise on French territory. To obtain this degree the postulant must formulate his request to the Minister on *papier timbré*, enclosing a copy of his birth certificate, his diplomas, and class certificates, formally translated. This honorary degree is readily obtained, and from English candidates it is probable that an appearance in so-called "final" subjects would alone be required.

Up to Dec. 29th, 1906, it was possible to transform the university or academic diploma into a Government degree by becoming a naturalised French subject. On account of the large number of young Russian girls who married in France and thereby became French and claimed the State diploma it has been decided to insist upon the possession by foreigners of the *license-ès sciences* before this transformation can be granted. The fees for this degree amount to between £60 and £70.

The authority conferred on the Minister empowered him to exempt a certain number of students from the necessity of taking the diploma of bachelor, but this at last gave rise to such abuses that various associations both of medical men and of students protested against what they felt to be an injustice, as the proportion of exemptions was 20 per cent. in some of the faculties. A decree of May 12th, 1909, announced that no exemption would from that time be granted to any student. As, however, there was no desire to create obstacles for foreign students who come to Paris in continually increasing numbers, an official circular of June 2nd, 1909, stated that foreign students (but no others) might be granted exemption under the same circumstances as before, provided, that is to say, that their object is to take merely the diploma of the university and not the State diploma, which alone gives the right to practise medicine in France.

ITALY.

Some years ago the British and American consuls at the great centres of Italian population and commerce combined to form an estimate of the money brought annually into the kingdom and spent within its borders by the English-speaking world. That estimate, an approximate one necessarily, which they carefully checked by every qualifying consideration conceivable, amounted to £20,000,000 sterling, about one-third of Italy's whole revenue at that time. Since then the yearly influx of English and especially of American visitors has greatly increased, so that were a similar calculation to be made now the estimate would doubtless be still larger. This is a fact of great importance from whatever [illegible] continuous [illegible] is true that [illegible] object the expulsion of all foreign practitioners from the country, has been carried on by a section of the medical profession in Italy, but the movement has proved only partly successful, the public at large being well aware of the injury which the adoption of such a measure would inflict upon its interests. The British medical men and their American *confrères* form a prominent reason for Italy continually to attract that portion of the travelling public from which she derives so much of her annual revenue. There are therefore excellent reasons why every facility should be offered to them for exercising their calling freely in her cities and health resorts, and we may state at once that the regulations which still exist in Italy with respect to the foreign practitioner are most liberal and fair, it being open to anyone possessing a medical qualification recognised as legal in the country of its origin to engage in practice amongst the foreign visitors and residents within her borders. The restrictions ruling in Switzerland, France, and, indeed, nearly every other European country, do not exist in the Italian kingdom. The medical man's qualification, certified by ability to produce his diploma, is quite sufficient. He has, therefore, (*a*) no examination to pass; (*b*) no fees to pay; (*c*) no Government forms to comply with; and (*d*) requires no previous residence in the country as a "condition precedent" to practise. All the same it will be to his advantage to graduate at an Italian school—Rome, Turin, Pavia, Padua, Bologna, Siena, Pisa, indeed, all Italian Universities, grant degrees to duly qualified practitioners who can pass the examination these Universities require. On the other hand, in a country compelled by its financial requirements to impose taxes in every possible direction the English-speaking practitioner has to pay the heavy income-tax ("*ricchezza mobile*" it is called) of nearly 13½ per cent., besides being liable to the comparatively mild "tassa di famiglia" (tax on domestic servants, &c.), levied on foreign and native residents alike.

As to the career Italy offers it is in some respects better, in other respects worse, than it was some years ago. It is better inasmuch as Italian medicine and surgery have greatly improved of late years, and the foreign practitioner, particularly in those cities which are the seat of medical schools, is not in danger, as he used to be, of getting out of touch with the advance of the profession. Indeed, the British medical man may keep himself *au courant* with the latest accession to medical doctrine as conveniently in the Italian as in any other kingdom. By graduating at one or other of the many Italian schools he can obtain the *entrée* to the medical societies, the congresses (provincial and national), the hospitals, the class-rooms open to the native practitioners, and also become entitled to the reduced railway and steamboat fares conceded on occasion to all duly qualified Italians. Indeed, he is generally welcome to them on the ground of professional *fratellanza* (brotherhood), but the graduation above indicated gives him a right to what he would otherwise owe merely to courtesy. On the other hand, the career is less favourable than formerly on account of the larger number of English-speaking competitors whom it now attracts and who comprise not only Englishmen and Americans, but Swiss, Germans, and other nationalities as well. Their harvest (generally limited to three or four months of the "season") entails immense, almost excessive, activity, compensating the comparative idleness of the months before and after it. Upon this short period of remunerative work the practitioner must therefore rely to carry him through the entire year, and with heavy expenses to meet for housekeeping, house rent, servants' wages, taxes, &c., it becomes a serious matter for him when the "season," as often happens, turns out a poor one. He may certainly be able to supplement his winter's income by taking up practice at one or other of the summer resorts, but such practices are difficult to find and with few exceptions are of little value. Failing this he will find nearly the whole summer on his hands, for it is useless to remain at his post during the hot season while his patients have all left to seek the cooler air of the Alps and the Tyrol or have returned to their own country. Nothing is then left for him but to follow their example and thus to incur the heavy expense of moving somewhere else with his whole family. Nevertheless, for a well-qualified man with sufficient private means to tide him over the first years, and who is possessed of good social introductions, there are always openings where he can still find a profitable *clientèle*, although his possible income at any of the smaller health or pleasure resorts will necessarily be limited.

One word of warning in conclusion. Let anyone who is tempted to buy a practice in Italy proceed with even more caution that he would in negotiating in his own country. In the first place, the foreign population of nearly all Italian towns is largely a floating one, composed chiefly of people who remain for but a few weeks, often for only a few days in one resort, and many of whom never come back again. The vendor of a practice in a place of this sort will have many patients on his books whom he cannot possibly introduce in any way to his successor, and a good many others whom he may introduce but who will never return to the locality, or at best do so only at long intervals, and can therefore form no permanent or profitable part of his successor's *clientèle*. His hold upon the practice is, in fact, of a peculiarly personal kind and cannot, in the nature of things, be easily transferred to another. Secondly, the purchaser himself must be a man fitted for this particular class of work, or he may discover too late that he cannot make it pay and that the capital which he has expended has been spent to no purpose. A similar remark is doubtless true with regard to all such transactions, but it applies with special force in the circumstances now under consideration, where the physician has to deal with patients of such varying types and diverse characteristics as are to be met with amongst the travelling public in an Italian health or pleasure resort. To achieve a full measure of success the foreign practitioner in Italy must not only be a man of good all-round attainments, conversant with all branches of his profession, but should be possessed of an unusual share of sympathy and tact, for the exercise of which he will have daily scope amongst patients on whom illness falls with peculiar sadness, alone, as they so often are, and helpless in a foreign land.

GERMANY.

Foreign diplomas are not legally recognised in Germany as entitling their owners to practise medicine, so that British medical men desiring to settle in that country have to attend all the classes and pass all the examinations. A young German before commencing the study of medicine must pass an *Abiturienten-Examen* requiring a knowledge of French, Latin, Greek, mathematics, history, and theology. Or the examination of a *Real-Gymnasium* or an *Oberrealschule* may be passed. In the latter event more stress is laid on modern languages, mathematics, and natural history, and English is required instead of Greek. Foreigners have, as a rule, to pass this examination, but if they have already passed a similar one in their own country they may be exempted from it by a special order to be obtained from the Minister of Public Instruction for each individual case. Medicine can only be studied at a university; the curriculum lasts five years, after the second of which the examination called the *Tentamen Physicum* must be passed; it includes anatomy, physiology, chemistry, physics, and natural history. After the end of the fifth year the student presents himself for the "State Examination," which is practical as well as theoretical, and includes medicine, surgery, obstetrics, gynæcology, pathology, materia medica, and hygiene. After passing the State examination the medical man, previously to obtaining his qualification, has to perform his practical year as clerk and dresser at a university clinic or a recognised hospital. If the medical man wishes to have the title of "doctor" he has to pass another examination, which is little more than a formality, but the degree of doctor without the State examination does not legally confer the right to practise. This title of doctor is granted by every German university to foreigners, but the conditions differ according to the university. Some universities demand a special course of study and others do not, and the intending candidate must in every case make inquiries of the authorities. The law does not allow qualified British practitioners any exceptional facilities in passing the examinations; the time of study may possibly be made a little less than five years for those who have already studied abroad, but a special order, very difficult to obtain, is always required for this purpose. A thorough knowledge of German is essential, The fees for lectures are at least £130 and the examination fees about £12. The fees for the degree of M.D. vary from £10 to £20, being highest at Berlin University, which is the degree that is most popular with alien medical men. There is sometimes no prohibition set against holders of British diplomas practising in Germany provided they do not make use of any professional titles resembling those of qualified German medical men. Medical men practising in this way *must, however, understand that the law regards them as* unqualified and that they have none of the rights or privileges of the medical profession.

Austria-Hungary.

In order that foreigners may legally practise medicine in Austria it is necessary for them to become naturalised Austrian subjects, which necessitates five years' residence in the country. In special cases the Minister of the Interior, conjointly with the Minister of Education, may grant exemptions from that rule and may permit foreign holders of diplomas to practise in Austria if they comply with the other requirements. These are: The production of a so-called Maturitätszeugnis or certificate of having passed the final examination of the gymnasium, at which the candidate must show a satisfactory knowledge of Latin and Greek, as well as of German or one of the other languages spoken in the Austrian Empire, such as Polish, Bohemian, Italian, also of mathematics, history, natural history, chemistry, geography, and physics. If a British medical man or student has passed a similar examination in his own country he may apply for exemption, which is generally granted; he need only produce proof of his having passed such an examination, in the shape of a certificate, to be translated into German by a properly recognised translator. The medical curriculum lasts 11 semesters, or five and a half years. The holders of foreign diplomas may, however, obtain permission to pass their examinations at shorter intervals than are necessary for the students, so that from 18 months to two years may be reckoned as sufficient. After passing the first theoreticum, or first examination, which comprises biology, anatomy, physiology, and chemistry, and which, as a rule, is passed at the end of the fourth semester, the student is allowed to commence hospital work; at the end of the tenth semester he may present himself for the second theoreticum. This and all other examinations (altogether three in number) are both practical and theoretical and must be completed within eight days. Only one subject is taken each day. It comprises internal medicine, surgery, and pathology, whilst the third and last examination comprises gynæcology, obstetrics, hygiene, materia medica, and ophthalmology; pædiatrics, otology, dermatology, and laryngology are examined in alternately. This last examination the student is expected to pass not later than five years after the first, otherwise he has to present himself again for certain subjects of the first examination, especially anatomy. The fees for the three examinations are £15, and then comes the fee of £6 5*s.* for the degree of M.D., without which degree nobody is allowed to practise. The fees for the lectures are about £35 for the five years, and about £15 for special classes may be added, so that the entire cost of obtaining the degree of M.D. would be from £70 to £75. All the universities confer the degree of M.D., and no distinction is made here as regards the place where the title has been gained, although the University of Vienna is most favoured because it offers the best opportunities for studying. In special cases the Minister of the Interior may *allow a foreign qualification to be recognised as entitling its* holder to practise, only a mere formal examination being required; such a special order is, however, very difficult to obtain. The examinations are entirely oral and are conducted in various languages according to the locality—namely, German in Vienna, Innsbruck, Graz, and Salzburg; German and Bohemian in Prague, and Polish in Cracow and Lemberg. These seven universities are the only ones in Austria, and only they may grant degrees, as the medical schools are invariably integral parts of the universities. If a British medical man wishes to practise in one of the frontier spas or in Karlsbad he will have little difficulty in obtaining permission to do so if he applies for it, especially if he gives an assurance that he will only attend his fellow-countrymen and only for the season. He need not then obtain official recognition of his diploma.

As regards Hungary, the medical curriculum is for practical purposes similar to that in Austria, and the foreigner, whether a holder of a diploma or a student who wishes to practise legally, must become a naturalised subject and n pass the three above-mentioned examinations in Hungarian language. Applications for admission must addressed to the Minister of Education, who decides upon conditions of admission after consultation with the med faculty of Budapest. Usually the applicant has to pass tl medical examinations after having proved his qualifica for admission by a Maturitätszeugnis, or testimonial *sufficient preliminary instruction in two classical langua* chemistry, arithmetic, geometry, and physics. The exami tion is allowed only in the Hungarian language. The total amount to 295 kronen (about £12), and the fee for "pro tion"—i.e., for the M.D. degree—is similar to that in Aust Besides the university in Budapest there is another univer in Klausenburg for which the same rules hold good. Only th two universities may confer medical degrees in Hung In 1906 new regulations were drawn up which are now in hands of the Minister, but they have not been ratified. these rules the Professional Committee demands the pass of the second and third practical examinations from th who gained their diploma before 1901. Those gained their diploma after that year are compelled to the second and third examinations, and in addition to one year in a hospital which is designated for that purp The subjects of the old second examination are as follo clinical medicine, surgery, operative surgery, ophthalmolo obstetrics, and operative obstetrics. The old third pract examination embraces the following subjects: clin medicine (theoretical), surgery (theoretical), forensic m cine, and public hygiene. The new third examina embraces the following subjects: clinical medicine, surg operative surgery, obstetrics and gynæcology, opera obstetrics, ophthalmology, operative ophthalmology, der tology, pædiatrics, and psychology (from the latter three c one is compulsory, decided by lottery). The new sec examination embraces pharmacology, general patholo forensic medicine, public hygiene (all theoretical), pathological anatomy (theoretical and practical). Minister has the right to allow settling in Hungary with demanding the passing of these examinations, but i questionable whether he will exercise this right.

Denmark.

In Denmark only those who have passed the Dan Medical Examination are entitled to practise. In Icel it suffices to have been examined at the Medical Sch in Reykjavik. The medical student before beginning studies must present a diploma of *Examen artium*— examination very similar to the German *Abiturient examen*. At the close of the first year he must pass *Examen philosophicum*. The medical studies proper requ from six to seven years. The foreign student will find agreeable difference from what is customary in ot countries—namely, that all University lectures and clini courses are free, payment of class fees being unknown, a few pounds are required for the examination. On pass the examination the young man becomes entitled to practi and not a few commence at once. The majority, howev prolong their practical training by accepting an appointm as (salaried) junior house physician or house surgeon in o of the numerous hospitals of the country. The most hig valued appointments—namely, those at the Kommune hospi or Royal Frederic Hospital of Copenhagen—were, howev formerly in so great demand that not rarely four, five, or ev *more years elapsed before an aspirant* could secure t coveted position, when he served for one or two years in t different departments of the hospital. This unreasonably lo waiting time is now considerably reduced, as the Associati of Junior Medical Men has arranged with the faculty a other authorities for the establishment of a larger number appointments, which are to be officially considered equivalent to the older appointments at the two hospitals.

The only academical degree for medical men known Denmark is the degree of M.D. It is granted exclusively the University of Copenhagen, and only to those who ha submitted to the faculty an original investigation of u doubted scientific value, the consequence being that only comparatively small number of Danish practitioners posse the degree in contradistinction to what is customary, f example, in Germany. In fact, the Danish degree of M. must be considered as equal to the German title of *Priva docent* or the French title of *professeur agrégé*, as it authoris its possessor to teach publicly in the university.

The only portion of Danish territory where a foreign medical man is permitted to make use of his diploma are the Danish islands in the West Indies, the Governor being empowered to grant such permissions; but he is not likely to do so except during epidemics or when other abnormal conditions obtain.

NETHERLANDS.

A medical practitioner holding British qualifications cannot practise in the Netherlands without being also qualified in the Netherlands. For this purpose it is necessary to pass the medical examinations of one of the universities.

SWITZERLAND.

Foreign practitioners must pass the first, third, and fourth State Examinations. These examinations are held in either French (at Lausanne and Geneva) or German (at Berne, Basle, and Zürich). In addition to the British five years' curriculum practitioners would require one or two years' additional study. The examination fees amount to about £9.

SPAIN.

To practise in Spain it is necessary for the holder of British qualifications to apply to the Minister of Public Instruction and Fine Arts and enclose the degrees, diplomas, or similar credentials which he possesses, and request permission to appear before an examining body. The above documents must be translated by the Interpretation Bureau of the Ministry of State and afterwards presented in the Ministry of Public Instruction, together with a petition to the Minister, clearly stating the applicant's requirements. The examination which confers a licence to practise consists of three parts: 1. A written examination lasting two hours. 2. A *vivâ voce* examination. 3. Clinical examination of a patient and a report upon his condition. The fee for the examination is 40 pesetas (£1 12*s.*). The fee for the diploma is 814.50 pesetas (£32). The length of time between the presentation of the documents to the Ministry of State and Public Instruction and the granting of the diploma is variable on account of the time occupied in the necessary legal formalities. The expenses of translation of the documents likewise vary with their length and the consequent work entailed to be done by the Bureau.

PORTUGAL.

Holders of foreign diplomas must apply for examination at the schools of Lisbon or Oporto or the Faculty of Coimbra. The cost of the examination, including the diploma, is about £50. For the last examination the presentation of a *printed dissertation is required.*

TURKEY.

Every foreign medical practitioner desirous of settling in Turkey for the purpose of practising his profession must undergo the ordeal of the so-called "colloquium." This is a sort of professional examination very easy in itself but a source of annoyance and vexation to Europeans by the dilatory propensities of Orientals and their habit of conducting business in an indolent and easy-going way. The "colloquium" itself takes about half an hour's time, whereas the preliminary steps and arrangements and the subsequent formalities necessary for the final obtainment of the medical permit lasts for weeks and even months. The "colloquium" must at the present time be passed either in French or Turkish without any interpreter, the choice of the language being left to the examinee. The possessor of a foreign diploma is tested, as a rule, in four subjects, and the testing consists in three or four questions in each subject, which the candidate has to answer orally. It has not yet happened that a European physician failed to pass the "colloquium." The fee for it used to be about £8. Two or three years ago it was raised to about £20. I am informed that this was done in order to increase the revenue of the rather inefficie[illegible] Medical School at Haidar Pasha and to diminis[illegible] us medical men flocking to the [illegible] most every country adjoining the Ottoman Empire. A far better means of effectively doing the latter would be to raise the rather low standard of the "colloquium." There are numbers of [illegible] other parts of Turkey [illegible] the case [illegible] With the [illegible]ent new [illegible]troduced [illegible] ctice of foreign medical men, [illegible] has lately already touched [illegible]uestions, such as the service of non-Mussulman practitioners in the Ottoman army. I learn that strict measures will be taken against all those who do not possess necessary qualifications, that the standard of the medical curriculum will be raised, and that the manner of conducting the "colloquium," as well as its character, will be completely changed. Regenerated Turkey intends to organise everything in accordance with modern lines of European efficiency.

RUSSIA.

The law relating to foreign medical practitioners desirous to practise in Russia is contained in the two following paragraphs of the *Vratchebny Ustav* or medical statute:—Section 93 (*a*): No one, whether a Russian subject *or a* foreigner, who has not a diploma or certificate from a university or from an Army Medical Academy, has the right to follow any branch of medical or veterinary practice in Russia: (*b*) foreign medical practitioners who wish to practise medicine in Russia must, without exception, know the Russian language. Section 94: Of foreign practitioners who shall be invited or who may come to Russia the right to decide which of them shall be permitted to free practice here and under what conditions is in the hands of the Medical Council of the Ministry of the Interior; some shall be permitted only after the usual examinations and consequent granting to them of a learned degree; others more distinguished after an oral examination in the Medical Council; lastly, others who have made a name in the scientific world by their writings or unusually successful practice, or who have occupied professorial chairs or other important medical appointments in other countries, may be permitted to practise without any examination, solely on the decision of the Medical Council, confirmed by the Minister of the Interior, as to the worthiness of such practitioners.[1] Previous residence in the country before practice would not be necessary except in the case of the first group mentioned, who would have to pass through the usual five years' course of a Russian medical curriculum. As to the prospects of a British practitioner in Russia, the country and the smaller towns can present no attraction to an English medical man, even if the fees obtainable would support him, which they would not. In the two capitals, Moscow and St. Petersburg, the field is wider. Competition is, however, great, fees are as a rule small, and bad debts many. The frequency of bad debts results from the unwritten law by which medical men do not send in accounts, but leave the patient to pay what he considers a suitable amount.

EGYPT.

Any person in possession of a diploma from a recognised school of medicine is allowed to practise his profession in Egypt after having presented his diploma to the Director-General of the Sanitary Department at Cairo for verification and paid a small fee of 6 piastres. From a recent report of the department it appears that the influx of medical men into Egypt of late years has been very great, so that it is difficult to understand how some are able to gain a livelihood from their profession. The effective control of diplomas which emanate from so many different foreign schools must be at times somewhat difficult, as the Public Health Department has no means of identifying the person who presents the diploma as the person who underwent the examinations which entitled him to it—e.g., there is nothing to prevent a person who has come into possession of a diploma by fraudulent means personifying the legitimate owner of the diploma and obtaining a licence to practise. It is true that in addition to the diploma a certificate of good conduct is necessary from the applicant's Consul before a licence to practise is granted, but in many cases the Consul finds himself in the same difficulty as the department with regard to ascertaining if the person in possession of the diploma is the rightful owner or not. We recommend any one of our readers who is attracted by the idea of medical practice in Egypt to obtain introductions to a resident in Egypt so that he may ascertain the chances of finding a remunerative opening and be provided with a witness to his identity. A knowledge of French or Italian and Arabic would be essential to any new-comer desirous of practising two senior medical officers and the two Grade I. medical officers in charge of Negri Sembilan and Pahang are allowed consulting practice only. Other medical officers are prohibited from private practice except in very special cases where the Resident-General is satisfied that, owing to the absence of private practitioners, it is absolutely necessary to allow the Government medical officer to attend to private patients. The posts of medical officer, Grade II., in the Federated Malay States and the corresponding appointments in the Straits Settlements are filled by the promotion of officers who have entered the service as house surgeons.

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[1] This Section dates from 1830; it was amended in 1842, 1845, and 1857.

Hong-Kong.—The principal civil medical officer receives £800 per annum, rising to £1000. There are two health officers of the port, four medical officers of health, and four assistant surgeons with salaries of £480 rising to £720. Most of these appointments are pensionable. Private practice is not allowed and free quarters are only given in a few cases.

Mauritius.—There is a headquarters staff consisting of a director with a salary of Rs.10,000, an assistant director with a salary of Rs.8000, two sanitary wardens with a salary of Rs.6000, one assistant sanitary warden with a salary of Rs.5000, an assistant medical officer (Port Louis) with a salary of Rs.5000, a police and prisons surgeon with a salary of Rs.6000, and a health officer with a salary of Rs 5000. There is also a medical inspector attached to the Immigration Department. In the rural districts there are various medical officers, most of whom receive Rs.6000 a year, and are not allowed private practice. Free quarters are not given in most cases. The service is mainly recruited locally. Officers in the service of Mauritius are required annually to contribute 2 per cent. of their salaries towards their pensions.

Seychelles.—There are four medical appointments. The Government medical officer receives Rs. 4500. The assistant Government medical officers receive Rs. 3000. The holders of these latter appointments have free quarters. Private practice is allowed.

Gibraltar.—There is a surgeon of the colonial hospital receiving £275, £55 as medical officer of the civil prison and lunatic asylum, and horse allowance of £42, with private practice. There is also an assistant surgeon with a salary of £300 per annum, but without private practice, who is police surgeon, port surgeon, and surgeon to the port office without additional emoluments.

St. Helena.—The colonial surgeon receives £270 per annum and £27 horse allowance. Private practice is allowed.

Falkland Islands.—There are two appointments, one of which is paid at the rate of £300 per annum, with £25 as health officer, and the other at the rate of £200 per annum. Private practice is allowed in both cases.

Cyprus.—There is a chief medical officer paid at the rate of £500 per annum, two district medical officers paid at the rate of £250 per annum, and one paid at the rate of £200, rising by £10 a year to £250, all enjoying private practice and receiving 2*s.* per diem forage allowance. These are the only medical appointments in the island which are open to English candidates, and they are made by the Foreign Office.

All applicants for medical employment in these 18 colonies must be between the ages of 23 and 30 years, and must be qualified for registration. Preference will be given to those who have held appointments as house physicians and house surgeons; certificates of moral character and of sobriety will be required, and every officer before being appointed will be medically examined by one of the consulting physicians of the Colonial Office. There are pension funds established for widows and orphans in Ceylon, Straits Settlements, the Federated Malay States, Hong-Kong, and Mauritius, to which all permanent Government servants must subscribe 4 per cent. of their salaries.

The West African Medical Staff.—All the medical officers for the service are selected by the Secretary of State for the Colonies. They are engaged in the first instance for one year on probation and, except the principal medical officers, are allowed to engage in private practice as long as it does not interfere with the efficient discharge of their official duties. There are fair allowances when junior officers discharge the work of their seniors by deputy. Stores are transported free, out-of-pocket expenses in travelling are recoverable, there are proper horse, field, and outfit allowances, and all medical men are paid 10*s* per diem extra with free rations, or 3*s.* in lieu of rations, while serving on military expeditions. Candidates for the West African Medical Service must be British subjects of European parentage, preferably unmarried and between the ages of 25 and 35 years. They may choose their colony or protectorate, and as far as possible their wishes will be met, but they must make up their minds carefully as transfers are seldom made.

The grades and salaries of medical officers are shown in the following table:—

Grades.	Gold Coast, Southern Nigeria, *Northern Nigeria.*			Sierra Leone, Lagos.			Gambia.		
	Minimum salary.	Annual increment.	Maximum salary.	Minimum salary.	Annual increment.	Maximum salary.	Minimum salary.	Annual increment.	Maximum salary.
	£	£	£	£	£	£	£	£	£
Principal medical officer*	1000	50	1200	800	50	1000	—	—	—
Deputy principal medical officer ...	700	25	800	—	—	—	—	—	—
Senior medical officers	600	20	700	600	20	700	600	20	700
Medical officers ...	400	20	500	400	20	500	400	20	500

* In the Gold Coast the salary of the principal medical officer is £1000, with duty pay at the rate of £200 a year.

Every candidate selected for appointment will, unless the Secretary of State decides otherwise, be required to undergo a course of instruction for two or three months at the London School of Tropical Medicine or at the Liverpool School of Tropical Medicine. If for any reason he does not undergo the course before appointment he will be required to take out instruction on less favourable pecuniary terms during his first leave of absence. The cost of the tuition, fees, board, and residence during such instruction, amounting to a maximum of £48 8*s.* 10*d.* for three months, will be borne by the Government, and a daily allowance of 5*s.* will be paid to each candidate during the course and may be continued subsequently up to the date of embarkation. These payments will be made subject to the candidate signing an agreement by which he will be bound to refund them (1) if he declines to accept an appointment in any of the colonies or protectorates for which he may be selected; (2) if he fails to obtain the certificate referred to in the next paragraph; or (3) if he relinquishes the West African service for any other reason than mental or physical infirmity or is removed for misconduct within three years of the date of his arrival in West Africa. Every candidate sent to either of the schools of tropical medicine is required to obtain a certificate showing that he has satisfied the school authorities with regard to his regularity of attendance, progress, and proficiency.

The arrangements for special allowances and leave of absence are fair. The ordinary term of residential service is one year, followed by leave with full pay during the voyages to and from England and for four or two months clear in England, according as the officer is returning for further service in West Africa or not. If an officer is detained beyond the year additional leave is given with full pay for ten days in respect of each completed month beyond 12, whether he is returning or not. If he is invalided before the end of the year the leave with full pay is for the voyages and for ten or five days in respect of each completed month, according as he is returning or not. Leave granted on the understanding that an officer will return is known as "return leave" and any pay drawn in respect of such leave is liable to be refunded if an officer does not return. Leave may be extended for a limited period with half or no pay on the ground of ill health or without pay on other grounds. Free passages are given to all officers who are granted leave and on first appointment. On attaining the age of 50 years, or after 18 years' service (of which at least 12 must have been residential), an officer is qualified for a pension calculated at one-fortieth of the last annual salary for each year of service. If invalided after a minimum of seven years' service he is qualified for a pension calculated at the same rate. If invalided before completing seven years' service he is qualified for a gratuity not exceeding three-fourths of a month's salary for each six months of service, provided that he has been confirmed in his appointment and that he is specially recommended by the governor or high commissioner for such gratuity. At the end of nine years (of which not less than six must have been residential) an officer of the West African Medical Staff is permitted to retire with a gratuity of £1000, or at the end of 12 years (of which not less than eight must have been residential) with a gratuity of £1250, such gratuities being *in lieu of* pension.

East Africa, Uganda, Nyasaland, and Somaliland Protectorates.—The salary of a medical officer in these Protectorates is £400 per annum, rising to £500 per annum by annual increments of £20. There are 20 appointments of this rank in the East Africa and Uganda Protectorates, seven in Nyasaland, and two in Somaliland. In East Africa and Uganda there are also certain special appointments at salaries of £600 or £650 per annum. The salary attached to the appointment of principal medical officer in Uganda is £750 [illegible] per annum, rising to £600 per annum by annual increments of £25, in the case of Nyasaland. Private practice is permitted when it does not interfere with official duties. Free passages are provided. Two months' leave on full pay is granted every year, subject to the exigencies of the service, and leave is allowed to accumulate up to *six months*. Officers remaining at their posts for two and a half years are entitled to six months' full-pay leave with free passage each way.

POST-GRADUATE STUDY.

POST-GRADUATE study is divided into three main divisions —the general study of professional subjects (including the special study of some branch), the study of state medicine, and the study of tropical medicine. We have already described the provision made for instructing graduates in the last two divisions, mentioning the procedure necessary to obtain diplomas or certificates for proficiency in them. The following article shows the principal arrangements existing for general post-graduate instruction, and some little repetition has been necessary:—

LONDON.

The London Post-Graduate Association.—The London Post-Graduate Association is now so well known that it is hardly necessary to remind our readers that it is composed of the following hospitals and medical schools (general and special)—viz.: *General Hospitals:* Charing Cross, Guy's, King's College, St. Mary's, St. Thomas's, University College, and Westminster. *Special Hospitals:* The Brompton Hospital for Consumption and Diseases of the Chest, the Hospital for Sick Children (Great Ormond-street), the London School of Tropical Medicine, the National Hospital for the Paralysed and Epile[illegible] Ophthalmic Hospita[illegible] Medical Graduates' [illegible] charge for which is [illegible] or 15 guineas for six months) admits the holder to the clinical instruction in the wards and out-patients' departments, the operations, necropsies, and other hospital practice of all the institutions mentioned above. For the purpose of enabling qualified medical men to keep up to date in their work we can heartily recommend the scheme offered by the London Post-Graduate Association, which thus places the best of all the hospital work in London at the disposal of its ticket-holders. The office of the association is now at 20, Hanover-square. Further particulars may be obtained by writing to the Secretary, the London Post-Graduate Association, 20, Hanover-square, London, W., or by personal application between the hours of 10.30 A.M. and 1 P.M. any week-day except Saturday.

Medical Graduates' College and Polyclinic.—This institution affords to medical practitioners special facilities for acquiring technical skill and for advancing their clinical and scientific knowledge. The building contains lecture- and consulting-rooms, a pathological and clinical laboratory, a Roentgen-ray room, an ophthalmoscope-room, a museum, a library, and reading- and waiting-rooms, &c. Cliniques are given on each working day of the week except Saturday at 4 P.M., and a lecture on medicine, surgery, or their special branches, is delivered daily except on Fridays and Saturdays, at 5.15 P.M. Classes are also held in otology, laryngology, rhinology, ophthalmology, radiography, anatomy, nervous diseases, microscopy, urinary analysis, gynæcology, practical bacteriology, mental diseases, hygiene and public health, and operative surgery. Extra classes in any subject are formed to suit the convenience of practitioners unable to attend those already provided. Special tutorial classes are held for practitioners reading for the higher examinations. A monthly journal, the *Polyclinic*, recording the work done in the college, is issued free to subscribers and members. The annual subscription for medical practitioners of either sex is 1 guinea. Full information can be obtained from the medical superintendent at the college, 22, Chenies-street, Gower-street, W.C. The autumn session will commence on Monday, Sept. 13th.

The Hospitals of the Seamen's Society.—In connexion with these hospitals there are two post-graduate schools—viz., (*a*) the London School of Tropical Medicine; and (*b*) the London School of Clinical Medicine.

(*a*) *The London School of Tropical Medicine.*—The school buildings, laboratories, museum, library, &c., are within the grounds of the Branch Hospital Royal Victoria and Albert Dock (Station, Connaught-road, Great Eastern Railway). Opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the service or going abroad. In the hospitals of the society are to be found cases of tropical diseases such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning on Oct. 1st, Jan. 15th, and May 1st respectively. The laboratory, museum, library, &c., are open daily and clinical instruction is given daily in the wards of the hospitals. The School Course is recognised by the University of Cambridge for its Diploma of Tropical [illegible] for advanced [illegible] The lecturers [illegible] Dr. Andrew Duncan, Dr. L. Westenra Sambon, Dr. J. M. H. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, Dr. F. M. Sandwith, Mr. K. W. Goadby, and Professor W. J. Simpson. The Director is Dr. C. W. Daniels. Certificates are granted after examination to those who [illegible] yearly.

(*b*) *The London School of Clinical Medicine* (for qualified practitioners only).—The lecture rooms, pathological laboratories (two), museum, and operative surgery class-rooms, are in the *Dreadnought* Hospital at Greenwich, and the whole hospital of 250 b[illegible] is open to students fr[illegible] Surgical, and Special [illegible] held upon every aftern[illegible] members of the staff and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the assistant physicians and assistant surgeons daily in the forenoon. Practical classes are arranged each session in the following subjects: The Practice of Medicine; the Practice of Surgery; Diseases of the Eye; Diseases of the Throat, Nose, and Ear; Diseases of the Skin; Diseases of the Nervous System; Operative Su[illegible] Bacteriology [illegible] the Adminis[illegible] Health; Gyn[illegible] Diseases of C[illegible]; M[illegible] Diseases of Children; Applied Anatomy; and Midwifery. Three sessions of three months' duration are held in each year, beginning on Jan. 15th, May 1st, and Oct. 1st. Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals. Male patients chiefly are received as in-patients by the Seamen's Society, but arrangements have been entered into with the Royal Waterloo Hospital for the reception of graduates who desire instruction in diseases of women and children; with the Bethlem Hospital for those [illegible] and with the General [illegible] rosecution of study in [illegible] ed on the south side of the river, are directly linked to the *Dreadnought* by both railway and tramway, and are affiliated to the London School of Clinical Medicine. The certificates of the school are recognised by the Admiralty, the War Office, and the University of London (for the higher degrees) The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology on the cadaver. The hospital also offers a wide field for the study of venereal diseases and there is a special department with open-air wards for the treatment of tuberculosis. The teaching staff consists of: Sir Dyce Duckworth, Dr. Frederick Taylor, Dr. J. Rose Bradford, F.R.S., Professor R. Tanner Hewlett, Dr. Guthrie Rankin, Dr. S. Russell Wells, Sir William H. Bennett, Mr. Albert Carless, Mr. William Turner, Mr. Lawrie H. McGavin, Mr. L. Vernon Cargill, Sir Malcolm Morris, Mr. Richard Lake, Dr. Sale-Barker, Dr. T. Lewis, Dr. D. W. Carmalt Jones, Dr. Frederick Langmead, Mr. E. Rock Carling, Mr. C. C. Choyce, Mr. R. Bickerton, Dr. Wilfrid Fox, Mr. G. N. Biggs, Dr. Maynard Horne, Dr. Cecil Hughes, Dr. Vivian B. Orr, and Dr. R. E. Delbruck. The extra-mural lecturers are: Dr. James Taylor, Dr. W. H. B. Stoddart, Professor W. J. R. Simpson, Mr. James Cantlie, Dr. William J. Gow, Dr. Herbert Williamson, M[illegible] Howard, Mr. Herbert S. Pendlebury, Dr. Alexa[illegible] Dr. Robert O. Moon, Dr. Charles O. Hawthorne, Dr. Thomas D. Lister, Dr. William R. Dakin, and Mr. C. C. Choyce, Dean.

The prospectuses, syllabuses, and other particulars of both schools can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, S.E., or from the Deans at the associated Schools.

West London Post-Graduate College, West London Hospital.—The West London Post-Graduate College was started in 1895 and three years later its basis was enlarged by the provision for the post-graduates of lecture-, reading-, and waiting-rooms, &c., while owing to [illegible] of the college these were transferred [illegible] especially constructed for the purpose. Over 1700 post-graduates have been enrolled since its establishment, the yearly entry being now about 200. The hospital, which contains 160 beds, is in the main Hammersmith-road, about three miles from Hyde Park Corner, and very accessible by omnibus, tram, or train. The physicians and surgeons attend daily at 2.30 P.M. Post-graduates accompany the staff and the junior staff on their visits to the wards. Instruction is given in the out-patient department daily at 2.15 P.M. by the assistant physicians and assistant surgeons. The out-patient department has recently been enlarged and there is now ample accommodation for post-graduates to see and to examine the patients in all the special departments of the hospital. Clinical assistants are appointed from among the post-graduates to the Medical and Surgical out-patients and the Special Departments. The fee for a clinical assistantship to non-members is £2 2*s.* for three months, which includes membership of the College on the days on which the clinical assistant attends. Practical classes, limited in number, for instruction in special subjects, as well as in medicine and surgery generally, are held as required. Operations are performed daily at 2.30 P.M. Post-graduates are allowed to stand close to the table and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations. Instruction is given in the administration of anæsthetics by the anæsthetists on the operating days and post-graduates are allowed to administer anæsthetics under their superintendence. Post-mortem examinations are performed at 12 noon, and demonstrations on recent pathological specimens are given on Mondays at 12 noon during each session in the pathological laboratory. Also two demonstrations are given each week on Practical Medicine on Wednesdays and Fridays at 12.15 P.M. Practical lectures and demonstrations are given each afternoon (except Saturdays), at 5 P.M., during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums. The college is licensed for the teaching of operative surgery. The fee is £4 4*s.* each member in a class of four. The practice of the hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal Army Medical Corps and Indian Medical Service who have obtained leave for further professional study, and the certificate of attendance at the college during such leave is recognised by the Admiralty. The college is recognised by the University of London for hospital practice before the M.D. degree and by the Royal College of Surgeons for the necessary work before the Fellowship examination. The pathological laboratory has just recently been completely reorganised and placed in the hands of the pathologist, Dr. Bernstein, who attends there during the whole day and gives instruction in Bacteriology and Microscopy. A special class meets on three mornings a week from 11 to 1, and post-graduates joining the class can work in the laboratory at other times under the guidance of the pathologist. A class meets 12 times and commences at the beginning of each month. The fee for this class in bacteriology and microscopy is £3 3*s.* The fee for the hospital practice, including all ordinary demonstrations and lectures, is £1 1*s.* for one week, £3 3*s.* for one month, £6 6*s.* for three months, £10 10*s.* for six months, £15 15*s.* for one year, and is £25 for a life ticket; all fees to be paid in advance. A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1*s.* A vacation class is held each year in August, the fee [illegible] 2*s.* for the course of one month, including hospital [illegible] or a ticket for a fortnight's hospital practice, including the lectures, can be obtained for £1 11*s.* 6*d.* The fee for a three months' course of instruction in the administration of anæsthetics, including a special class, is £3 3*s.*, or without the class, £2 2*s.* A ticket for any of the above courses will be issued at any date. Arrangements can be made for gentlemen working for higher university examinations to be coached. The Winter Session will commence on Monday, Oct. 11th. All communications should be addressed to the Dean, Mr. L. A. Bidwell, Post-Graduate College, West London Hospital, Hammersmith-road, W.

North-East London Post Graduate College.—This post-graduate school is established in connexion with the [illegible] of Wales's General Hospital, Tottenham, N., which is recognised by the University of London as a place of post-graduate study for the M.D. and M.S. degrees and by the Admiralty and the India Office for purposes of study leave. Facilities are there afforded to qualified medical practitioners for taking part in the work of an active general hospital of 125 beds and for attending demonstrations in various branches of medicine, surgery, and gynæcology, with opportunities for clinical instruction in diseases of the eye, ear, throat, nose, skin, in fevers, psychological medicine, the administration of anæsthetics, and dentistry. Cliniques, lectures, and demonstrations are given by members of the teaching staff in the lecture room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed on every afternoon of the week except Saturday. Special limited classes are arranged in gynæcology, the surgical diseases of children, including orthopædic surgery, diseases of the throat, nose, and ear, diagnosis of diseases of the chest, diagnosis of diseases of the nervous system, ophthalmoscopy and refraction, analysis of gastric contents, clinical examination of the blood, diseases of the skin, abdominal surgery, radiography, bacteriology (which is accepted by the University of Cambridge for its D.P.H. diploma), and medical electricity. The fee for a three months' course of study, which may be begun at any time, in any single department, is one guinea. A fee of three guineas admits to the whole practice of the hospital for a similar term (one month two guineas), and a perpetual ticket for the practice of the hospital may for the present be obtained on payment of a fee of five guineas. Medical practitioners who have attended a three months' course in any department are eligible for appointment as clinical assistants in those departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A pathological museum and a pathological laboratory for original research are available. A reading- and a writing room, containing a reference and lending library, is provided, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham).

The lecturers are as follows:—In General Medicine: Dr. Percy Kidd, Dr. R. Murray Leslie, Dr. G. P. Chappel, Dr. A. J. Whiting, Dr. A. G. Auld, and Dr. T. R. Whipham. In General Surgery: Mr. John Langton, Mr. Walter Edmunds, Mr. H. W. Carson, and Mr. J. Howell Evans. In Gynæcology and Obstetrics: Dr. Arthur Giles. In Diseases of the Eye:

Mr. R. Philip Brooks. In Diseases of the Ear, Throat, and Nose: Mr. H. W. Carson. In Diseases of the Skin: Dr. G. Norman Meachen. In Fevers (at the North-Eastern Fever Hospital, St. Anne's-road): Dr. Frederic Thomson. In Diseases of Children: Dr. G. F. Still. In Diseases of the Chest (at the Mount Vernon Hospital and the Northwood Sanatorium): Dr. J. E. Squire. In Psychological Medicine (at the Colney Hatch Asylum): Dr. S. J. Gilfillan. In Tropical Medicine: Mr. James Cantlie. In Radiography and Medical Electricity: Dr. A. Howard Pirie. In the Administration of Anæsthetics: Mr. A. de Prendcrville and Dr. F. H. Wallace. In Pathology and Bacteriology: Dr. G. G. Macdonald. In Clinical Pathology and Bacteriology: Dr. Basil Price.

The opening lecture of the winter session, in conjunction [illegible] Clinical Society, will be [illegible] Oct. 7th by Mr. J. Bland- [illegible] prospectus and syllabus of lectures and demonstrations, may by obtained from the Dean of the School, Dr. A. J. Whiting, at the Hospital or at 142, Harley-street, London, W.

(To be continued.)

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Strasburg:* Dr. Erich Meyer, *privat-docent* of Medicine in the University of Munich, has been offered an Extraordinary Professorship with the Directorate of the Medical Policlinic; Dr. Hans Dietlen, assistant in the University Medical Clinic, has been recognised as *privat-docent* of [illegible] ocent [illegible] ssor; [illegible] t of [illegible] has [illegible] Dr. [illegible]

AT the following five pottery towns, Burslem, Stoke, Longton, Newcastle-under-Lyme, and Fenton, ophthalmia neonatorum has been added to the list of compulsorily notifiable diseases.

THE chairman of the Hospital for Sick Children, Great Ormond-street, has announced that the profits of the Midsummer Fair and Fête recently held on behalf of that hospital, together with the subscriptions received on that occasion, amounted to £5387, but that the hospital still owes £5500 advanced by its bankers for current expenses.

MEDICAL EDUCATION AND THE SONS OF MEDICAL MEN.—As the question has been asked us more than once whether the sons of medical men entering the medical schools of the various London hospitals are granted any rebate on their fees, we think it may interest intending medical students and their parents to know how the matter stands. There is no such general principle recognised at the London schools as the admission of medical men's sons upon more favourable terms than others for several quite good reasons. We need only mention one, which is that whatever may be the case now, in the past the choice of medicine for a profession has often been due to family [illegible] men in certain [illegible] medical men [illegible] heir fees would have amounted to almost a general cheapening of the cost of medical education. At present medical education at the London schools is conducted at great pecuniary disadvantage, and at many of the institutions the instruction of the students is undertaken practically gratuitously by the medical staff, and this may account for the grant of special terms to sons of medical families at so few of the schools. A few scholarships founded on the lines suggested by those of our correspondents who have inquired whether the sons of medical men could not be educated more cheaply than the sons of laymen would undoubtedly prove of value. So far as we know, the only medical schools which grant any special facilities at present are Charing Cross, where a Huxley Scholarship which is only open to the sons of medical men has been established; St. Bartholomew's, where there is a scholarship for the best pupil of the year who has received his education at Epsom College, the recipient often being the son of a medical man; London, where a reduction of fees is made to the sons of medical men; and Westminster, where a reduction of the composition fee is made to the sons of medical men who have not already at the time of entry won a scholarship. In exceptional circumstances the councils of most of the London Medical Schools would, no doubt, consider any particular case where a reduction of fees seemed desirable on its merits.

THE DEATH OF DR. HENRY RADCLIFFE CROCKER.—We deeply regret to announce the death of Dr. Henry Radcliffe Crocker, the well-known dermatologist, and physician to the Skin Department of University College Hospital, which took place in Switzerland on Sunday last, August 22nd, the sad event occurring suddenly. Dr. Crocker, of whom we shall publish a more detailed obituary notice, was the author of some admirable writings on his subject, while his pen was laid under contribution for such first-class compendiums as "Quain's Dictionary of Medicine," "Heath's Dictionary of Surgery," and "Allbutt's System of Medicine" This Journal has lost in Dr. Crocker a personal friend, for he was for many years a regular contributor to our columns.

PARLIAMENTARY INTELLIGENCE.—ABANDONMENT [illegible] will not proceed with [illegible] dairies this session. [illegible] withdrawn and the corresponding measure for Scotland, which has been before the House of Lords, will not be proceeded with further. The announcement of the decision of the Government was made on August 20th in the House of Commons by the Prime Minister, who, in accordance with the usual custom at this stage of a session, indicated the measures which, owing to lack of time, would have to be dropped. The inclusion of the two Milk Bills amongst the "massacred innocents" has not occasioned much surprise. The Milk and Dairies Bill for England had not even reached a second reading, and as the weeks of the session passed without any attempt being made to advance it, its prospects of becoming law this year diminished. The recent debate on the Scottish Milk Bill in the House of Lords showed that there were considerable Parliamentary obstacles in its path. At the same time, it must be recorded that in many quarters at Westminster disappointment, not to say dissatisfaction, exists at the shelving of these Bills.

POST-GRADUATE LECTURES IN THE UNIVERSITY OF VIENNA.—Of late years a series of post-graduate lectures [illegible] has been delivered at the [illegible] Vienna during the vacation [illegible] October, and the results have [illegible] now been decided to make them a permanent institution. As in former years, a course may either extend over a period of four weeks or may consist of 24 attendances of one hour each. In order to ensure the maximum benefit for those attending such classes none of them will consist of more than ten members. As during summer time no clinical lectures are delivered and the professors are generally away for their holidays, a large amount of clinical material can be used by the lecturers for purposes of illustration. The fees for such classes vary from £3 3s. to £5 5s. Special care is taken to arrange such courses as will be found most useful by practitioners desirous of bringing their knowledge up to the present standard. The important subjects of anaphylaxis, serotoxicology, operative surgery, biology, bacteriology, vaccine therapy, electro-therapeutics, and hæmatology are therefore well represented in [illegible] Many of these [illegible] numerous courses being held [illegible] ves of the Englishmen and Am [illegible] for these opportunities thus [illegible] already far in excess of the number of vacation classes are places available. The last courses usually take place in September, but this year an extension to October will no doubt be necessary

DEATH.

GRANGER.—Suddenly, at a Nursing Home, Leeds, on August 22nd (of appendicitis), Henry Maxwell Granger, M.B., Ch.B., aged 23, youngest son of the late Dr. John Ross Granger, of 2, Grosvenor-terrace, Glasgow.

OUR CURRENT NUMBER

Being almost exclusively devoted to information especially interesting to Students we are necessarily compelled to defer the publication of communications on other important subjects.

We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of THE LANCET *relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies may be found.*

TO ADVERTISERS.

Owing to the pressure on our advertisement columns this week some announcements have unavoidably been held over.

◆

T. C.—We of course noticed the character of the English but we think that the illiteracy hardly required indication from us.

Communications, Letters, &c., have been received from—

A.—Dr. J. Aitken, Kilmarnock; Dr. J. D. Albright, Philadelphia; A. D.; Dr. J. E. Adams, Lond.; Sir T. Clifford Allbutt, Vermala-s.-Sierre; Ashton-under-Lyne Union, Clerk to the; Messrs. Allen and Hanburys, Lond.; Dr. Z. Abdalla, Paris; Anglo-American Pharmaceutical Co., Croydon.

B.—Mr. J. A. Barth, Leipsic; Dr. W. F. Barnes, Halifax, Nova Scotia; Sir W. Bennett, Lond.; Board of Education, Lond.; Major B. D. Basu, I.M.S. [illegible] Executive Health Officer of; Mr. A. A. Bradburne, Southport.

C.—Mr. J. Jackson Clarke, Lond.; Messrs. Cassell and Co., Lond.; Mr. W. Clark, Edinburgh; Dr. T. Carruthers, Kilbarchan; Casein, Lond., Director of; Mr. H. A. Collins, Croydon; Messrs. T. Cook and Son, Lond., Messrs. J. and A. Churchill, Lond.; Colonial Office, Lond.; Mr. James Cantlie, Lond.

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E.—Messrs. Eason and Son, Dublin; Enquirer.

F.—Messrs. Ferris and Co., Bristol; Dr. P. Fusco, Rome.

G.—Messrs. Gale and Co., Lond.; Great Yarmouth Hospital, Secretary of.

H.—Mr. A. H. Hudson, Lond.; Mr. E. Douglas Hume, Lond.; Dr. George Hall, Newcastle-on-Tyne.

I.—India Rubber, Gutta Percha, and Telegraph Works Co., Lond.; XVIth International Medical Congress, Budapest, Chief of the Press Office of; Incorporated Institute of Hygiene, Lond., Secretary of; *The Irish Law Times and Solicitors' Journal*, Dublin, Editor of.

J.—Staff-Surgeon A. H. Jeremy, R N., Bournemouth; J. M. B., Messrs. W. and A. K. Johnston, Edinburgh; J. S.

K.—Dr J. R. Kaye, Wakefield; Mr. T. J. Kelly, Enniscorthy; Dr. Knight, Portobello; Dr. J. Knott, Dublin.

L.—Dr. R. A. Lyster, Winchester; Captain A. E. J. Lister, I.M.S., Meerut, Leeds Public Dispensary, Secretary of.

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N.—Mr. S. Nelmes, Hamilton, Bermuda.

O.—Oldham Union, Clerk to the; Messrs. Osborne Peacock Co., Manchester.

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R.—Mr. C. A. Ryde, Brussels; [illegible] Hospital, Dublin, Registrar of; Messrs. Reynell and Son, Lond.; Royal College of Surgeons in Ireland, Dublin, Registrar of; Messrs. Reitmeyer and Co., Lond.; Royal Institute of Public Health, Lond., Secretary of.

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Y.—Yost Typewriter Co., Lond; *Yorkshire Evening Post*, Lond., Manager of.

Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Armour and Co., Lond.; A. H. G.; A. D.

B.—Mr. G. Brickenden, Sheerness; Dr. F. F. Bond, Gloucester; Dr. W. T. Black, Memphis, U.S.A.; Box 7, Ammanford; Baroda State, India, Chief Medical Officer of; B. A. W. S.; B. F.

C.—Mr. D. M. Curtis, Rayleigh; Mr. J. Clark, Edinburgh; Dr. F. Collie, Lond.

D.—Messrs Driver and Sons, Chelmsford; Dr. A. F. Dixon, Dublin; Dr. D.

E.—E. W. D.

F.—Dr. C. M. Fildo, Lond.; Mr. C. Foley, Ruardean; Messrs. R. Foord and Co., Lond.; Messrs. H. Frowde and Hodder and Stoughton, Lond.; Dr. M. Fawkes, Southampton.

G.—Staff-Surgeon W. H. O. Garde, R N., Queenstown; Mrs. Gabriel, Antigua; Dr. A. Graham, Lond.; G. S.; Great Northern Central Railway of Colombia, Lond., Secretary of; Messrs. F. H. Gerlock and Co., Scranton, U.S A.

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I.—Dr. I.

J.—Mr. A. J. Jones, Lond.

K.—King's County Medical Society, Brooklyn, Secretary of.

L.—Mr. H. K. Lewis, Lond.; Mr. C. Lund, Newcastle on-Tyne; "Locum," Ipswich; London Temperance Hospital, Secretary of; Locum, Malvern Link.

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N.—Dr. P. C. Nandi, Calcutta.

O.—Mr. F. W. Ord, Castle Gresley; "Omega," Sheffield; Mr. C. A. P. Osburne, Old Catton.

P.—Dr. S. Parmanandas, Bombay; Plymouth Borough Asylum, Blackadon, Clerk to the; Dr. P.

R.—Mr. D. Richardson, Watford; Dr. A. T. Rimell, Manningtree; Royal Portsmouth Hospital, Secretary of; R. F. R.

S.—Mr. H. C. C. Shaw, Lond; Dr. J. A. Struthers, Blantyre; Salford Union, Clerk to the; Mr. W. Savage, Burslem; Dr. R. V. Solly, Exeter; S. H. R.; Mr. B. R. Sawhney, Jammu; "Sunnydene," Lee; S. B. G.; Messrs. Shaw and Co, Lond; Stoke upon Trent Union, Clerk to the; Mr. B. E Sansom, Lond.; Dr. A. F. Stevens, Seaford; Mr. J. Sampson, York.

T.—Mr. J. B. R. Thomas, Lond; Mr. T. W. Thomas, Caerphilly; Telephone Instalment System Co., Lond.

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An Address

ON

CANCER IN MAN AND ANIMALS.

Delivered before a General Meeting of the Sixteenth International Medical Congress, Budapest, September, 1909,

By E. F. BASHFORD, M.D. Edin.,

DIRECTOR, IMPERIAL CANCER RESEARCH FUND, LONDON.

A complete change has been effected in many aspects of the cancer problem during the past seven years, and I propose to give you some account of the share the Imperial Cancer Research has had in effecting it. The extent of the ground I shall have to cover must be my excuse for the imperfect references I shall make to the valuable work of investigators in other centres of active investigation of [illegible] longer commence with the [illegible] limited to the white man and, in consequence of his transmitting it, to races living under the circumstances peculiar to his particular form of civilisation, and to his domesticated animals. On the contrary, the liability to cancer of all races of mankind and of all vertebrates, even when living in natural conditions, has been established as a fact from which all attempts to explain the disease must start. Whilst all claims to have transferred cancer experimentally previous to 1900 had either broken down before the criticism that the lesions adduced to substantiate the claim were not the lesions of cancer, or, as in the case of Hanau and Morau, had been received with scepticism, from lack of confirmation, the experimental reproduction, at will, of the lesions of carcinoma and sarcoma has to-day become a matter of mere laboratory routine. I shall attempt to show you that these two achievements have established the investigation of cancer upon a sound comparative biological and experimental basis; further, that they have done away with the stagnation of thought and with the pessimism pervading the minds of the scientific public at the close of the nineteenth century. Under their auspices rapid progress has been made in defining more narrowly both the nature of the disease and the direction in which its ultimate explanation will be found.

Although the immediate consequence has been the possibility of conducting a multiplicity of highly specialised investigations, and although no revolutionary generalisation on the etiology or on the prevention and treatment of cancer is yet possible, still that steady advance in knowledge which the successful application of the experimental method has always foreshadowed in other paths of human endeavour may be anticipated also in the case of cancer. So much is certain, whether a chance observation appreciated and followed up with genius may lead to a sudden and unexpected relief of human anxiety and suffering it is impossible to foresee, but the ever-increasing army of experimental investigators augurs well for so important a chance opportunity not being missed should it present itself.

Survey of the Incidence of Cancer in Vertebrates.

The experimental studies of the Imperial Cancer Research have been coördinated from their inception in September, 1902, with the study of the natural incidence of the disease in all races of mankind and throughout the vertebrate kingdom. Reference made to the Japanese statistics shows that instead of being rare in that country cancer claims 25,000 victims a year, and an analysis of the Indian hospital figures indicates such close similarity in its pro[illegible] different parts of the body that it is [illegible] general incidence of the [illegible] and. Vegetarian castes in India are no more exempt [illegible] indulging in a mixed diet. [Slides were here shown of congenital glio-sarcoma of the orbit from West Africa, of scirrhus of the breast from the Sudan, of epithelioma of the lip in a Dinka from the White Nile, and of an osteo-chondro-sarcoma from Northern Nigeria. [illegible] then seen to be susceptible no evider[illegible] of epidemic [illegible] nal races wh[illegible] in Europear[illegible] in mammals and the lower vertebrates was illustrated by lantern slides of growths from [illegible] and fishes; and carcinomata of [illegible] were shown from the frog, trou[illegible]

Our earliest contributions to the experimental study of [illegible] that the disease [illegible] the results of Ehrlich [illegible] of recognised authority in England and Germany appeared to us both inexplicable and unjustified. In the light of our comparative experience it would have been strange indeed if the mouse had proved to be exempt from cancer. Orth has recently written: "There occur in mice tumours which, although not identical in every respect with human carcinomata, nevertheless, exhibit so many points of similarity with the latter, that it appears correct to designate them as carcinomata of the mouse, and to apply the observations made on them to human pathology with the precautions necessary in all experimental and comparative pathological investigations." This statement by Orth, conceding all we have ever contended for, marks the end of any serious opposition on the part of pathologists of authority to the experimental study of cancer.

It has been too often wrongly asserted that the mouse [illegible] of the mamma. I illustrate the [illegible] her forms of malignant new growths by a [illegible] slides from specimens in our collection of carcinoma of the stomach, small intestine, pancreas, ovary, [illegible] gland, preputial glands, also of sa[illegible] melanoma, and [illegible] described squamous-celled [illegible] mouth and lympho-sarcoma; Haaland has described squamous-celled carcinoma of the vulva and adeno-carcinoma of the lung, as well as chondro-sarcoma of the vertebral column. Ehrlich has described a chondroma probably of congenital origin; carcinoma of the uterus has been recorded from Buffalo; Tyzzer has described papillary cyst-adenoma of the lung, cyst-adenoma of the kidney, and lympho-sarcoma; Jobling has recorded spindle-cell sarcoma on chest wall (? mamma) and papillary cyst-adenoma of the ovary. The great liability of the female mouse to cancer of the mamma is merely an idiosyncrasy shared with the human female and the female dog.

I show you some histological pictures of typical adeno-carcinoma and alveolar-carcinoma of the mamma of the mouse, and exhibit several figures of mice showing primary growths and their metastases in the lungs and lymph glands. The clinical course, the results of surgical or other treatment, the pathological findings, and the relation to general metabolism have been carefully recorded in our laboratory for over 300 mice suffering from malignant new growths of the mamma. On a lantern slide has been grouped the clinical course of a few cases of carcinoma of the mamma, illustrating well their liability to recur after complete surgical removal has been attempted, and the fatal termination in consequence of dissemination or terminal cachexia. The observations agree with medical, surgical, and pathological experience in the human subject, and demonstrate how secure is the basis they afford for attempts to apply the results obtained by studying the disease in mice to the disease as it occurs in man. The main danger of the disease lies [illegible] it in a stage permitting comp[illegible] ipating dissemination [illegible] relief surgery can give is shown by the absence of [illegible], or of metastases, for months after removal of the primary growth. That the period of relief may equal one-third of the total life of the mouse justifies, and experimentally demonstrates, the value of the surgical treatment of the disease in man, so long as there remains no alternative to it. Convenience and questions of expense have led to the experimental investigation of cancer being developed on the basis of experience gained, for the most part, on mice, although the rat, dog, and other larger mammals have been employed by us to a less extent.

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[1] Full references to the work of others will be found in the publications of the Imperial Cancer Research—e.g., in the Third Scientific Report, 1908. Taylor and Francis, Red Lion Court, Fleet-street, London, E.C.

EXPERIMENTAL REPRODUCTION OF THE LESIONS OF CANCER.

For two years it looked as if the experimental study of cancer was going to break down once more in face of the criticism that the lesions of the disease, as it occurs naturally, were not reproduced experimentally. By a suitable technique it is now possible to reproduce all the esions of cancer experimentally—local infiltration, systemic dissemination, and the terminal cachexia.

After some preliminary controversy it is now agreed that nfection plays no part in the experimental transference of cancer, which is a true transplantation of living cells. The ntroduction of a particle of living tissue by means of a hypodermic needle does not reproduce the anatomical relations obtaining when normal cells become cancerous, and there would have been nothing to cause surprise had the cancer *cells continued to grow only* at the *site of* inoculaion; indeed, notwithstanding the demonstration which we gave in 1905, so little surprise was aroused in the minds of some experimenters at their failure to reproduce the lesions of dissemination, that Ehrlich in 1906, n setting up the doctrine of atrepsy, relied, to a large extent, on the assumption that their absence was of fundamental moment, and due to the tumour at the site of noculation so withdrawing the food-supply as to prevent its off-shoots from establishing themselves in distant organs. The absence of metastases is due for the most part to technical details in the procedure of inoculation and to the duration of the growth of the resulting tumour. The reproduction of the lesions has become in our experience a commonplace of laboratory routine. A survey of the facts on the experimental reproduction of the lesions of cancer, affords a demonstration of the adequacy of Ribbert's view, that all the lesions of the disease as it is exhibited in man, may be the consequence of the continued growth of cells which primarily were confined within a small circumscribed area.

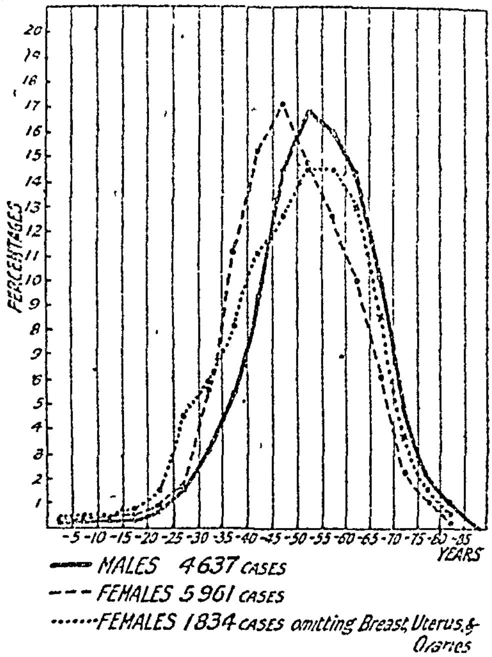
THE "AGE-INCIDENCE" OF CANCER AND THE EXPERIMENTAL DISTINCTIONS BETWEEN YOUNG AND OLD MICE.

The investigations of the Imperial Cancer Research have settled once and for all that cancer is a disease common to mankind throughout the world and to vertebrates. The illustrations I have shown you demonstrate clearly how closely the primary lesions of the disease resemble one another, even when occurring in animals so remote as man and fish. There is, however, another common and even more striking feature of the disease. Its peculiar association with certain periods of life in man, known as the "age-incidence" of cancer, reveals a law applicable to all vertebrates. A demonstration of its validity for the mouse is given by the following table showing the liability of the female mouse to carcinoma of the mamma at different age-periods:—

	6–9 months.	–12 months.	–15 months.	–18 months.	–21 months.	–24 months and over.
Total... ...	135	110	94	21	6	—
Cancer ...	3	4	7	3	2	—
Per cent....	2·2	3·5	7·4	14 2	33·3	—

The progressive increase shown in the table presents a remarkable parallel with the age-incidence of cancer of the mamma in the human female shown in the next table, and also adds a statistical confirmation to the results of our comparative histological and biological studies, which have shown the close parallel, amounting in many particulars to complete identity, between malignant new growths in man and other vertebrates. The above table demonstrates that the law of the age-incidence of the disease holds for the shortest-lived mammals as it holds for man. Since the less perfect data for other vertebrates are in complete accord with the facts established for mankind and for mice, the general application of the law of age-incidence is probable, and therefore any explanation of the etiology of cancer must accord with the circumstance that when considered *statistically* cancer is a function of age, and when considered *biologically* a function of senescence. The main condition for discovering a considerable number of cases in civilised and in savage man, in mammals, and in vertebrates generally is the examination of a sufficiently large number of adult and aged individuals.[2] The law of the age-incidence

FIG. 1.



Percentage distribution of cases of cancer from hospitals in 18 five-yearly age periods.

Table showing Deaths per 1,000,000 Living at each of the Age-Periods given (England and Wales). Average 1901 to 1904, illustrating the Different Age-Periods at which Cancer of Certain Organs begins to Increase Rapidly in Frequency.

Males.

—	Skin.	Stomach.	Rectum.	Tongue.	Brain.	Kidney and adrenal.
Under 5	0·79	—	0·13	—	3·30	7·93
5–10	0·28	—	—	—	3·38	1·69
10–15	0 46	—	0 46	—	2·49	0 73
15–20	0·61	0·15	0 91	0·15	2·90	0·46
20–25	1·00	2·33	4·83	—	3·33	1·17
25–35	2·37	15·08	10·94	1·58	6·31	1·77
35–45	10·53	89·69	35·90	21·82	10 66	5·71
45–55	36·34	325·62	142·54	114·10	16 50	16 63
55–65	103·39	875·64	393·57	224·59	20 25	33·47
65–75	278·49	1530·94	718·54	278·73	13·34	45·65
75–85	734·23	1490·71	826·19	305·56	2 97	54·88
85 and upwards.	1650·20	736·45	658·26	1772·94	—	13 64

Females.

—	Skin.	Stomach.	Rectum.	Uterus.	Breast.	Tongue.	Brain.	Kidney and adrenal.
Under 5	0 53	0·15	—	0 26	—	0·13	1·32	8 16
5–10	0·14	—	—	—	—	—	2·10	1·54
10–15	0·15	0·15	—	—	0·15	—	1·76	0 59
15–20	0 15	0 15	1·49	0 45	0·15	—	1·64	0 60
20–25	0 30	1·04	2·23	3·30	0·74	0·15	2 97	0 59
25–35	1·06	12·38	11·05	61 99	20·16	2·21	4·33	1·33
35–45	4 39	79 27	36·31	337·25	168·86	3 68	9 85	5 70
45–55	15 29	278·78	122 80	746 34	460·28	7 64	11 55	16·92
55–65	32 65	678 29	271·13	967·16	699·11	17·98	13 49	28·39
65–75	97·87	1195·33	441·44	1012 29	966 42	42·18	10 65	43·41
75–85	267·48	1255·77	532·15	910 94	1407·23	49·41	6 45	54·79
85 and upwards.	553·62	834 43	312 91	730 13	3013·88	24·07	—	24·07

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[2] The time of onset of cancer in developmental anomalies is probably a manifestation of the validity of the law of age-incidence for abnormal organisms and organs.

of cancer is of fundamental etiological and general biological importance. It applies both collectively and individually to the organisms of a species as well as to their individual organs and tissues, as shown for man by the curve (Fig. 1) of the age-distribution of cancer in hospitals, all cases having been examined microscopically, and by the table giving an analysis of the age-incidence of cancer for different organs in the general population.

Many aged persons escape cancer, which it must be distinctly pointed out is not caused by old age, for senescence, whether constitutional or confined to circumscribed areas of tissues, is only an endogenous predisposing factor.

At the commencement of the experimental study of cancer it was quite natural that old animals should be selected for inoculation purposes. We speedily found, however, that they are much less suited for the transplantation and growth of cancer than are young animals, as the following two charts show. The first chart (Fig. 2) illustrates the growth of our tumour "63" in three groups of mice, young, middle-aged, and old. You will notice a progressive diminution in the number of tumours developing as well as in their respective rates of growth. Tumour "63" shows itself less susceptible to differences due to age than are other tumours, as illustrated in the second chart (Fig. 3) for tumour "32," where you will notice the same progressive diminution in the number of tumours and in their rates of growth, according as inoculation was made into young, middle-aged, or old mice. Indeed, progressive growth did not take place in a single old mouse. At the end of four weeks all the old mice had cured themselves of the tumours "32." Such observations enabled Murray and myself to analyse some of the relations obtaining between the origin and the growth of cancer. In the first place they agree with the more rapid growth observed in the human subject, when cancer develops in young people. They also demonstrate that, while senescence is intimately associated with the inception of cancer, it is not necessary for its continued growth, and therefore the origin and the growth of cancer may be considered separately. I shall have to revert later to the respective parts played by the localised tissue changes and the constitutional conditions associated with the natural development and the growth of cancer. What is studied in the transplantation of cancer is the ability of tumour cells to establish themselves in new hosts and their powers of continued growth. In order to obtain uniform results great care must be taken to secure animals of uniform age. Old age of itself suffices to render mice absolutely resistant to the inoculation of cancer. As the second chart shows with clearness, the fact that the cells are able to establish themselves does not necessarily mean that they will be able to continue to proliferate, and later I shall demonstrate to you that growth is frequently terminated by the immunity which the tumours induce against themselves. The difference between inoculating tumours into young and into old mice is of great technical moment in the interpretation of experiments on immunity, as is evident from the charts I have just exhibited. No conclusion can be drawn from experiments bearing on the artificial induction of immunity or resistance to the inoculation and growth of cancer if this factor alone, or together with others to be mentioned later, has been neglected or not adequately allowed for. This is unfortunately the case in all experiments except those conducted in our laboratory. I shall have to refer to this fact again when discussing whether the resistance which can be induced by tumour tissue and by normal tissue is specific or general in its nature.

THE ALLEGED INCREASE OF CANCER.

It follows from what has been said above on the statistical importance of the age-incidence of cancer that very full attention must be given to the relative numbers of the population in different age periods, whenever any attempt is made to appraise the frequency of cancer. The problem of the relative frequency of cancer in this or that population and area overlaps the much-discussed question of *its alleged* increase. Savage races are unsuited for the *study of both* these problems and also for the investigation of the *relative* liability of *different sites of the body*. By the time the natives of Central Africa have so organised their communal life that reliable vital statistics are forthcoming the conditions of life among them will no longer be what they are to-day, and no doubt they will be interested in what to them may be a new problem, "the alleged increase of cancer." We have seen this stage reached at successive intervals in different countries with the progressive improvement of their national statistics, and since the work of the Imperial Cancer Research was started Europeans have passed from the belief that cancer was rare or did not occur, for example, in Japan, India, and Egypt, to the minor questions of its relative frequency, or its real or apparent increase in those countries.

It may be added that when our investigations were commenced and the determination come to in September, 1902, to study cancer in animals, doubts were expressed by some as to whether the difficulty of finding a sufficient number of cases would not prove insurmountable. The large number of cases of cancer (over 1000) which have been observed in mice by various investigators during the past six years does not mean an increased liability of mice to cancer, but simply that it has been looked for with care in a sufficiently large number of adult and aged animals, and found. The increase in the number of cases recorded throughout the vertebrates has the same significance.

The number of deaths assigned to cancer has increased from year to year in practically all countries. This increase is made to appear most alarming when it is taken up as a national problem—e.g., in England, Germany, or the United States—without due regard to the universality of the phenomenon. When due regard is paid to its universality in man and in animals, to the varying value of the data used for statistical purposes in different countries, and, in the same country at different times, as well as to the varying accuracy of the statistical methods employed, I very much question if those persons who have made exaggerated statements to the effect that the recorded increase of cancer represents a true and relatively increased liability to it, have any excuse whatsoever *for enhancing the reasonable anxiety* of the lay public.

Without digressing into a discussion of the statistics of cancer, I would point out that the number of deaths assigned to it as a cause of death increases from one country to another parallel with the increasing accuracy of the vital statistics of the several countries, as the following table from the report of the Registrar-General shows:—

Cancer Death-rates per 1000 Persons Living, 1881–1907.

Countries (arranged in order of rates in 1901–1905).	Quinquennial periods.					Years.	
	1881–1885.	1886–1890.	1891–1895.	1896–1900.	1901–1905.	1906	1907.
Switzerland	1·03	1·14	1·22	1·27	1·30	1·32	—
The Netherlands	0·60	0·70	0·81	0·92	0·97	1·01	1·02
England and Wales ...	0·55	0·63	0·71	0·80	0·86	0·92	0·91
Scotland	0·54	0·62	0·69	0·77	0·84	0·94	—
Austria	0·44	0·50	0·59	0·69	0·74	—	—
Victoria	0·45	0·53	0·62	0·69	0·74	0·75	0·80
Ireland	0·38	0·43	0·49	0·55	0·69	0·70	0·76
New Zealand	0·30	0·42	0·52	0·59	0·67	0·70	0·73
South Australia	0·32	0·39	0·48	0·56	0·67	0·74	0·70
Prussia	0·34	0·41	0·50	0·57	0·65	0·70	0·73
New South Wales	0·27	0·36	0·43	0·54	0·64	0·68	0·70
Belgium	—	—	—	—	0·58†	0·53	—
Queensland	0·25	0·27	0·34	0·44	0·57	0·55	0·65
Tasmania	—	0·49	0·49	0·55	0·56	0·52	0·63
Italy	—	0·43*	0·44	0·51	0·55	0·62	0·61
Ontario, Province of ...	0·21	0·20	?	0·41	0·52	0·64	—
Spain	—	—	—	—	0·41*	0·43	0·47
Western Australia ...	0·33	0·41	0·31	0·31	·45	0·59	0·50
Hungary	—	—	—	0·30*	0·39	0·40	0·42
Servia	—	—	0·06*	0·03	0·10	0·11	—

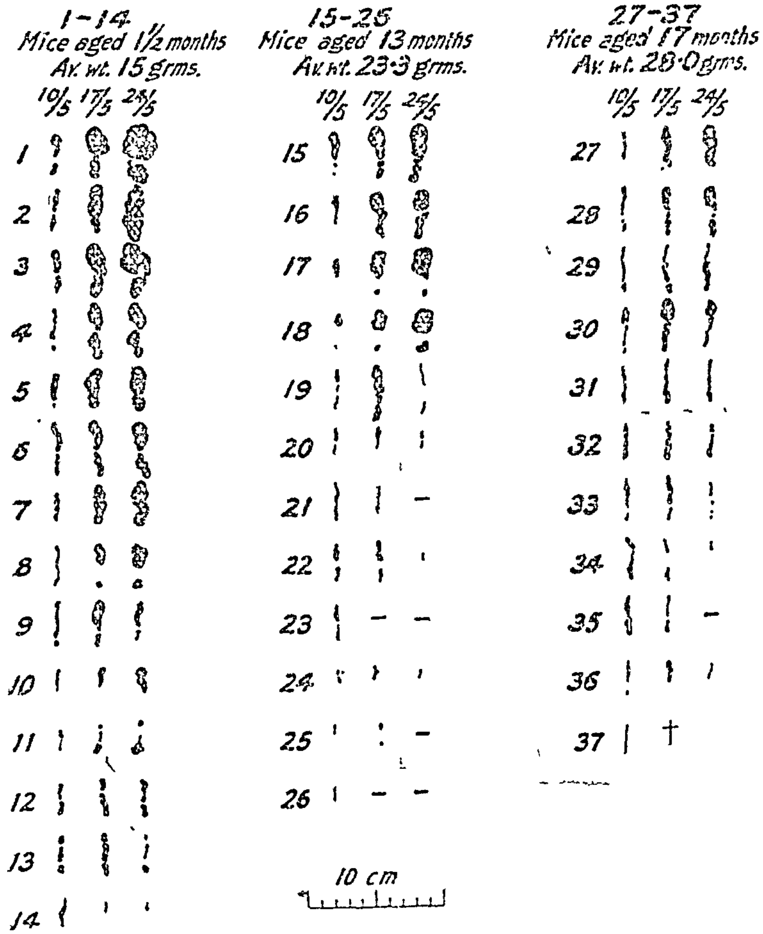
* Four years. † Three years.

The recognisable sources of fallacy in the data on which the above table is compiled and in the institution of comparisons between the cancer death-rates in different countries carry more weight with accurate statisticians than the differences existing between the figures for different countries. The differences between different countries which the table shows reproduce also the various stages through which the statistics of single countries have passed in the course of their development, and the same reasoning makes obvious their dubious value as evidence that the differences in the statistics of the same country at different times reveal real differences. Passing over statistical methods, I would point out that out of 10,532 cases of cancer treated in hospital—i.e., under the most favourable circumstances for diagnosis—1801 were not diagnosed as cancer from clinical evidence alone. Out of 9488 cases treated as cancer, 757 were not suffering from the disease. The following table illustrates the relative proportions in which the disease was diagnosed in different sites of the body according to their accessibility to complete physical examination:—

Analysis of the Cases of New Growths Reported by the Hospital Authorities (Microscopical Examination has been made in all Cases), 1904–09, all Ages.

—	Malignant new growths.		Wrongly diagnosed as cancer.
	Correctly diagnosed.	Not diagnosed.	
Accessible	5854	567	438
Inaccessible	1555	945	159
Intermediate	1322	289	160
Total	8731	1801	757
Accessible	91·1%	8·9%	—
Inaccessible	62·2%	37·8%	—
Intermediate	82·0%	18·0%	—
Accessible	93·0%	—	7·0%
Inaccessible	90·7%	—	9·3%
Intermediate	89·2%	—	10·8%

FIG. 2.



Comparison of suitability for growth of transplanted carcinoma (tumour "63") of mice of different ages, 1½ months (1-14), 13 months (15-26), and 17 months (27- with dose 0·05 cc and 24th. The n 37 mice in 10, ..

The errors of diagnosis in general practice are probably not less than in hospitals, although, of course, no direct comparison is possible between hospital patients and the general population. I need not enlarge upon the possibilities of improving the diagnosis of cancer in savage races and in animals, but it may be well to point out that the opportunities for their reaching cancer ages in large numbers are absent in many instances. The greater frequency of cancer in domesticated as compared with wild animals appears to be due, as we pointed out in 1903, not to contact with man, but to the fact that man so provides for and protects them that higher proportions live long enough to attain to their respective cancer ages.

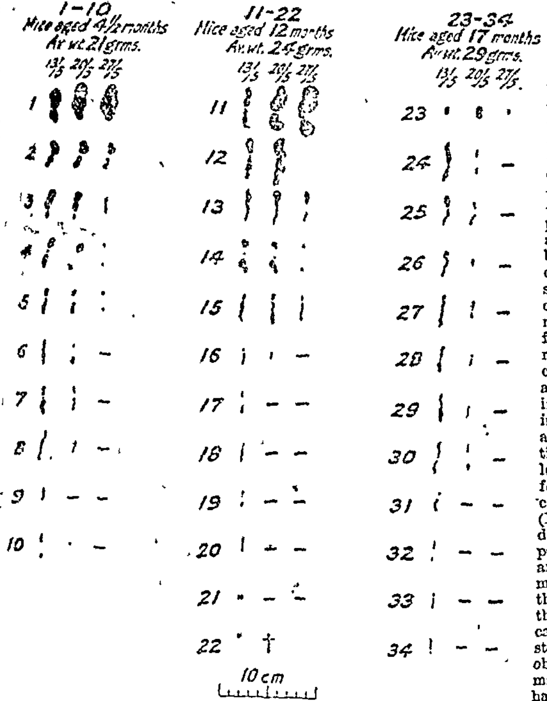
In recent years the attempt has been made to advance the statistical study of cancer, not by enumerating the numbers of those *dead* from it, but by making a census of persons *suffering* from it. The difficulties are greater in telling if a person is suffering from cancer than in determining if he died from it. The method is as fallacious statistically as is reliance on hospital statistics in order to adduce evidence of the increase of cancer. The collection of the clinical and pathological data from hospitals given in the above table has demonstrated that the taking of a census of cancer patients in the general population is an absolutely worthless tabulation of data vitiated by an exaggeration of all the fallacies inseparable from data of mortality. An improvement in the value of the statistical investigation of cancer is only to be expected from an improvement in mortality statistics as a whole—i.e., by an increase in the accuracy of all the data on which vital statistics are necessarily based. The necessity for greater completeness, uniformity, and accuracy of the data of mortality, and of those relating to the age-constitutions of populations, applies still more urgently if comparisons are to be made between the statistics of cancer of different countries. Comparisons between different countries will only be made profitable by an all-round raising of the standards of accuracy and completeness of vital and mortality statistics. For these and other reasons a cancer census has not been made in England. Where one has been made—e.g., in Germany, Holland, Hungary, and Spain—it has left all the problems of cancer just as they were. For these reasons we also consider the attempt to compile uniform international cancer statistics a counsel of perfection, and a Utopian scheme diverting both energy and money from other and more profitable lines of investigation.

There is no doubt that an absolute increase of the number of cases of cancer *recorded* from year to year is taking place not only in practically all races of mankind but also in vertebrate animals. Nevertheless, to alarm the public by proclaiming this as "an increase of cancer" in the sense that there is an increase disproportionate to the numbers and age-constitution of the populations examined is pure sophistry. Much of this increase can be referred with certainty to the larger number of individuals attaining to the "cancer age." Another considerable proportion can be referred with equal certainty to greater care in searching for the disease, as demonstrated for many native races and for animals. The universal endeavour to improve vital statistics in all countries is also in part responsible. Reviewing the whole circumstances, one must concede that these factors have been potent ever since statistics of any kind were available, and although it is impossible to deny that a relatively greater proportion of the population may die from cancer than previously was the case, nevertheless a real increase cannot be proved, and what has been made a cause of public anxiety appears to have little or no existence in fact.

THE INCIDENCE OF CANCER ON DIFFERENT PARTS OF THE BODY.

In considering the etiology of cancer regard must be paid to the site of predilection. According to the national mortality statistics

FIG. 3.



Comparison of suitability [illegible] cinoma (tumour "32" [illegible] months (11-22), and 17 [illegible] lated in right axilla [illegible] examined on May 13th, 20th, and 27th. The chart shows the relative sizes of the tumours attained in 34 mice in 10, 17, and 24 days after inoculation respectively.

of England and Wales, among males the organ most frequently invaded is the stomach; it is the seat of the disease in nearly 22 per cent. of the fatal cases, the liver and gall-bladder are invaded in nearly 13 per cent. of the whole, the rectum in 10 per cent., and the intestine in 8 per cent. Taken together, the parts here specified are attacked in more than two-fifths of the total cases recorded in the national mortality statistics. Among females the generative and mammary organs are affected in more than two-fifths of the total fatal cases; while a further two-fifths are contributed by the stomach, liver, intestines, and rectum, taken together. It is well known that cancer is more fatal to women than to men, and that this fact is accounted for [illegible]

but also the important differences, which obtain between the general population and a hospital population. In the latter all cases have been examined microscopically. One important difference is of interest—the maximum for the fatal cases in the general population occurs between 55 and 65, or ten years later than in hospital patients. This difference is partly accounted for by the duration of the disease from the time it is observed till the fatal issue, but is also to some extent an expression of the beneficial effects of surgical treatment by postponing death till the patients fall under the next decennial age-period. I need not do more than allude to sources of fallacy if any attempt be made to magnify the importance of the differing maxima.

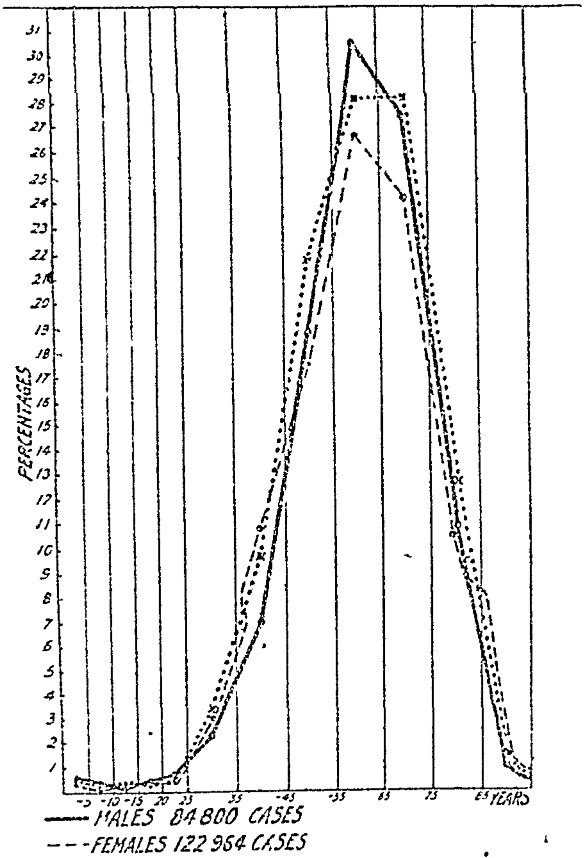
In England and Wales in the seven years ending with 1907 the recorded deaths of males from malignant disease other than that of the generative and mammary organs were equal to a rate of 730 per 1,000,000, whilst the deaths of females with the same reservation did not exceed 594 per 1,000,000, the total deaths from all forms of cancer being 84,800 males and 122,964 females. Therefore, when other individual organs are considered, there is an opposite contrast between the two sexes—e.g., cancer of the lip, tongue, œsophagus, stomach, and rectum is much more common in men than in women, but in women cancer of theg all-bladder and liver is perhaps more common than in men. On the whole, the liability of males, both generally and for individual organs—excluding the generative and mammary organs—is greater than that of females, and it appears possible that the difference is due not merely, if at all, to constitutional conditions determined by sex, but also by local circumstances peculiar to the organ attacked, perhaps by the customs of the two sexes, in the same way as the difference in the customs of women in India and in Europe determine their respective liability to, and exemption from, carcinoma of the mouth. I shall have to refer later to the enhanced importance thrown by comparative and experimental studies on the association of cancer of the skin with chronic irritation, and I may allude here to its possible importance also in connexion with cancer of the alimentary tract. The difference in the proportionate incidence of cancer on the upper and lower halves of the alimentary canal in males and females respectively, is brought out diagrammatically by curves for the population generally (Fig. 6) and for hospital patients (Fig. 7). The details lacking for different sites for the general population are available for hospital patients and may be cautiously employed to elucidate the mortality statistics. The curves of liability for the two sexes cross at the stomach in both, so that for males a higher proportion of cases of cancer of the alimentary canal occur above the stomach than below it, the opposite relation obtaining for the female sex. This relationship may be brought into connexion with the different habits of the two sexes, in consequence of which the upper part of the alimentary canal is more exposed to chronic irritants in males and the lower part in females.

The predilection for some sites rather than for others in mankind, and even the preponderance of certain forms of cancer in a single organ—e.g., scirrhus carcinoma of the breast in the human female—must be considered from another standpoint than that of chronic irritation. These sites of predilection reveal the existence of endogenous factors associated with cancer, when considered in the light of comparative investigation. In surveying the incidence of cancer in the vertebrate kingdom one has been struck by the fact that certain forms appear to preponderate in different classes—e.g., carcinoma of the thyroid in the trout. In the mammalia some species are very liable to forms of cancer of the mamma from which others, even nearly allied, are relatively or altogether exempt. Cancer of the mamma is extremely rare in the cow, common in the human female, the dog, and the mouse. In the animals liable to cancer of the mamma the disease exhibits specific characters in the relation between the epithelial and connective tissues—e.g., scirrhus in the human female; delicate stroma and great tendency to dilated blood sinuses and to hæmorrhages in the mouse; in the dog tendency of the connective-tissue scaffolding to the *formation* of cartilage and bone; in the rat to the *formation of dense* sclerotic tissue as in the human female. When fuller facts are available it will probably be found that the sites of election do really vary from one class or even nearly related species of animal to another. Since external conditions—e.g., chronic irritation—and modes of life cannot be made entirely responsible for the differences, they can be referred with some certainty to innate peculiarities of the several different mammalian organisms, predisposing certain organs to, or exempting them from, cancer, and determining even the type of [illegible] in an organ—e.g., the [illegible] It [illegible] to escape concluding that these differences justify the assumption that distinctive inter-relations exist between malignant new growths of the same organ in different species—e.g., the mamma—and the entire organism. We are thus brought face to face with local and constitutional conditions associated with cancer, and when we come to compare differences in the incidence of cancer in individuals of the same variety of a species we are tempted to assume an innate, or an acquired local, or constitutional predisposition in one case and exemption in another.

CHRONIC IRRITATION AND CANCER.

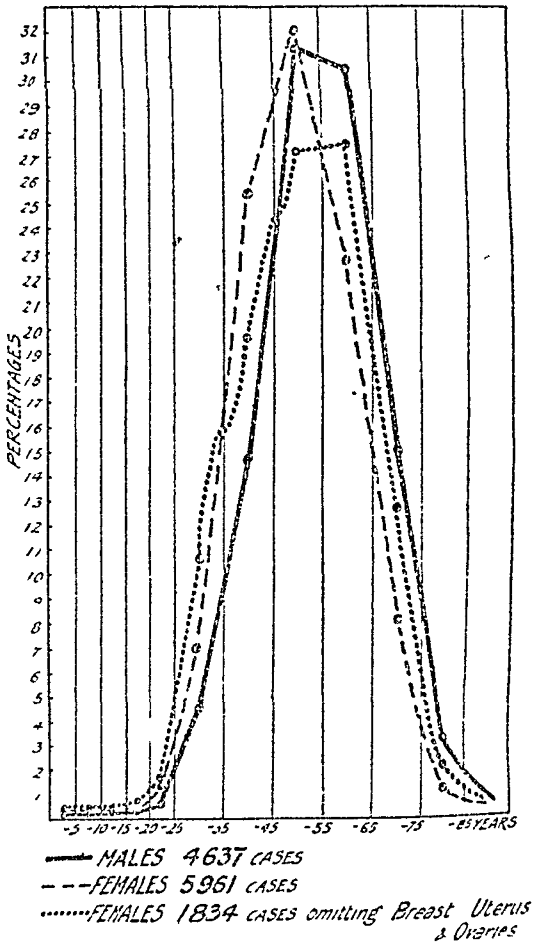
Since no race of mankind is exempt, the association of cancer with forms of chronic irritation[3] having nothing in common beyond their liability to produce chronic ulceration, chronic inflammation, or prolonged attempts at repair, is a fact of more moment than any futile discussion of the relative liability of different races of mankind. Carcinoma of the skin of the abdomen is practically unknown in Europe, yet it is most extraordinarily frequent in Kashmir, because the natives there wear next to the skin an oven containing burning charcoal. I show photographs of this charcoal oven, of Kashmiris wearing and using it, and also of the typical squamous-celled carcinoma with metastases resulting from the native practice. Carcinoma of the floor of the mouth is rare in European women although not uncommon in men; but in Ceylon and India generally the women suffer to a high degree from carcinoma of the inside of the mouth. This is due to the chewing of betel-nut and the practice of sleeping with the plug in the mouth; in the course of time carcinoma develops at the site so irritated. Without elaborating instances, it may be stated, in short, that the incidence of cancer on the surface of the body in different races of mankind is determined, on the whole, not so much by innate racial peculiarities, or differences in climate, soil, and diet, but rather by external irritants. The results of the study of the comparative incidence of cancer in man are of fundamental importance. They enhance the significance of two conclusions from histological and pathological investigation in Europeans: first, that cancer can arise locally in a circumscribed area; and second, that any part of the normal covering of the body may acquire cancerous properties. Hence it is also probable that more than one focus of origin, or even foci of different age, may be contained in a circumscribed area. Therefore, although the inception of malignant new growths is confined to a circumscribed area, and continued growth proceeds only from the resources of the tumour cells comprised in it, successive augmentations in the extent of the primary area by apposition cannot be excluded in all cases.

FIG. 4.



Percentage distribution of deaths from malignant disease in England and Wales, 1901-1907, classified according to age and sex.

FIG. 5.



Percentage distribution of cases of cancer in hospitals classified according to age and sex for comparison with Fig. 4.

I must point out emphatically that I do not feel justified at present in assigning anything more than an indirect or mediate etiological significance to chronic irritation and to other exogenous factors. The significance of chronic irritation is qualified by the fact of its not occasioning cancer in all individuals who subject, with equal intensity, identical parts of the body to its influence. An active prolonged or an intermittent process of regeneration and repair is intercalated before the development of cancer in tissues subject to chronic irritation. Observations, to which I shall refer later, have shown that there is an immense variety of carcinoma cells, all descended from normal cells, some of which pass into one another, while others do not, and are able to maintain their characteristics for prolonged periods during the artificial propagation of tumours. The same holds for sarcoma cells. It is not inconceivable that under the influences of chronic irritation the cells in a tissue undergoing a prolonged or intermittent process of regeneration and repair exhibit similar variations, some ultimately being capable of advancing to malignant cells and others not. The end result is possibly determined by a combination of these factors with constitutional conditions. In this way it becomes intelligible why the irritants themselves have so little in common. Haaland's observations in the laboratory of the Imperial Cancer Research Fund appear to have thrown much light on this subject. His studies on our tumour "37" concerning the experimental development of sarcoma—a phenomenon first recorded by Ehrlich and Apolant—have yielded evidence that repeated transplantation in some cases aids the process. At the time when carcinoma-sarcomatodes was obtained by this means no progress had taken place in the mouse yielding the mother material. From a review of the whole circumstances Haaland's observations point to the sarcomatous change arising in the tranformation of a few, perhaps isolated, normal connective tissue cells. Whether the process consists in a succession of small variations whereby they become transplantable and ultimately progress into sarcoma cells, or is a sudden acquisition of sarcomatous properties, is not definitely settled. It would appear that the repeated transplantation was of moment, in some cases, in effecting the transformation, partly by maintaining the cells in a continued or intermittent state of regeneration, partly by affording a means of selecting and perpetuating variations more capable of growth. This conclusion is put forward tentatively, for our studies on tumour "37" are still continuing, and a comparison will have to be made with another of our tumours "100" which Russell has found leads to the development of sarcoma. The behaviour of these two tumours as regards the development of sarcoma does not at present appear to be identical in all details, differing most prominently in that, whereas repeated transplantation aids the process for tumour "37," it hinders its advance in the case of tumour "100." Sarcoma development can be obtained constantly for tumour "100" provided growth is maintained for some 50 days in a single animal. Pure carcinomatous strains of both tumour "37" and tumour "100" have been maintained in propagation, so that it will be possible to harmonise their behaviour or to discover the nature of the differences if any really exist. I illustrate the experimental development of sarcoma in the course of the propagation of carcinoma by a series of slides for tumours "37" and "100."

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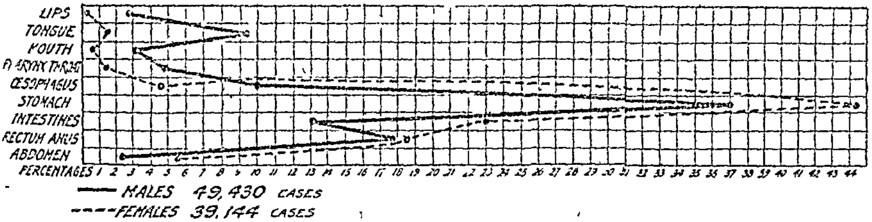
[3] For example, *physical injury*, as in fracture of bone, or in "brand" cancer, or the "horn core" of cattle, where squamous-celled carcinoma develops at the root of the right horn, to which a wagon is attached in India; *chemical*, as in paraffin, petroleum, arsenic, aniline, &c.; *radiant or actinic*, as in short clay-pipe, the Kangri, X ray, or where the skin over the shin bones of locomotive drivers has been exposed for years to the direct action of heat; *infective*, as in bilharzia of the bladder; tubercle in old lupus scars; Treponema pallidum in keratosis linguæ; tapeworms as recorded by Borrel; chronic inflammation and ulceration of all kinds, &c.

HEREDITARY, CONGENITAL, AND INFECTIVE HYPOTHESES OF CANCER

The question of the hereditary transmission of cancer has not been settled either one way or the other for man. The short duration of life in the mouse and the rapidity with which generation follows generation make it an ideal animal for the study of problems of heredity. For years we have devoted attention to breeding experiments with mice of cancerous stock. The starting points have been mice suffering naturally from the disease and relieved of their tumours by operation. In the first *400* mice, so bred, which lived over six months 30 cases of cancer appeared; the incidence of the disease continuing, however, to obey the law of age-incidence, without as yet giving any indication of in-born predisposition playing a part either in determining a local or constitutional liability to the disease, or even so much as an enhanced suitability for inoculation. Therefore it would appear that the disease or the local and general predispositions which apparently exist are always acquired, and, if so, may ultimately be found to be avoidable.

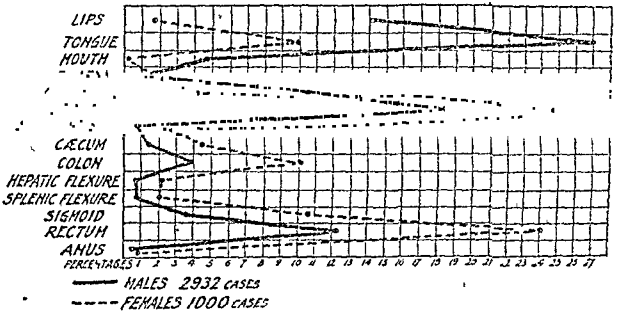
The pessimistic views entertained in regard to cancer are [illegible] nation of the ill defined idea [illegible] as a whole, being of "con- [illegible] compass the doom of many. This idea arises, in the first place, from a generalisation of the fact that certain forms [illegible] are undoubtedly associated with congenital a[illegible] neglect of the

FIG. 6.



Deaths from malignant disease of alimentary canal (England and Wales 1901-07) classified according to sex and part affected.

FIG. 7.



Incidence of carcinoma of alimentary canal (hospital cases) classified according to sex and part affected.

equally important fact that the acquisition of malignant properties by their component tissues is just as much a problem as the development of cancer in adult tissue. In the second place, it is due to seeking an analogy for the powers of growth of cancer in embryonic tissue. In the third place, it is founded on the assumption that the absence of histological differentiation in many cancers proved a biological resemblance to embryonic tissues previous to their differentiation—proved indeed a reversion to embryonic conditions.

The absence of any evidence of hereditary influences detracts much from hypotheses asserting a congenital origin for cancer. Other facts are even more emphatically opposed to them. The study of the incidence of cancer as determined by irritants in man demonstrates that the generalisation of the idea of a congenital or embryonic origin is incorrect. The growth of cancer is essentially different from the growth of embryonic tissue, analogies with which were natural so long as the growth of cancer was put an end to by the death of individuals. Experiment has revealed that the growth of cancer is, however, a unique biological phenomenon, disobeying all the laws of growth of embryonic tissue in accordance with which organisms and organs attain to their specific dimensions. The growth of cancer also differs in that in many instances it is accompanied by cyclical alternations between phases of more pronounced histological differentiation and phases in which all histological differentiation is absent. Any progressive histological change in the growth of cancer is in the direction of a disappearance of these alternations of histological structure, so that the histological differentiations exhibited at an earlier date are not manifested later.

When a carcinoma is transplanted the blood-vessels and supporting connective tissue scaffolding are supplied afresh as a reaction elicited by the chemiotactic influences of the parenchyma cells. The stroma of all transplanted tumours should be uniform if their characteristic elements possessed primary undifferentiated embryonic properties. On the contrary, tumours without any apparent histological differentiation elicit distinctive new vascular and connective tissue scaffoldings. The peculiarities of the stroma of different tumours remain constant during propagation. The fact indicates that the cells of malignant new growths, even when showing little or no indication of histological differentiation in the direction of any fully formed tissue, still possess permanent characters of a less obvious kind, and these characters are of the nature of specialisations or differentiations analogous to those which we recognise as histological differentiations. For over 60 propagable carcinomata growing in our laboratory it can be said that no single one is an exact duplicate of another. The cancer cells are therefore specialised and not undifferentiated cells. In the phenomena of induced resistance to the inoculation of cancer, especially in the specificities of immunity following the absorption of normal or cancer tissues, there is much that is opposed to the assumption that tumour cells are embryonic. Alternations in the rate of growth occur unlike anything known in the growth of embryos. In short, the interpretation of the absence of morphological differentiation as indicating a biological similarity of tumour cells to embryonic cells was due to the limitations of histological methods which were insufficient to reveal the fundamentally different biological properties of cancer cells indistinguishable by their aid.

If pathological anatomists have in the past often pointed out the difficulties in the way of drawing analogies between cancer and infective diseases, the comparative and experimental work of the past seven years has demonstrated that cancer has no analogy with *any known form* of infective disease. The force of this demonstration has appealed even to the staunchest supporters of a parasitic etiology for cancer, and has obliged them so to modify their opinions that I do not propose to discuss in detail the *petitio principii* into which they have been coerced, except with regard to the alleged occurrence of epidemics of cancer in rats, mice, and trout. Many tens of thousands of mice suffering from cancer have been under the most stringent observation in our laboratory. If cancer were communicable, animals housed along with those naturally suffering from, or inoculated with, cancer would be the first to suffer. In an experience extending over more than six years—i.e., more than three times the average length of a mouse's life—exhaustive investigation, during which some 200,000 mice have been inoculated, has shown that this risk does not exist. Those handling the animals incur still less risk in passing many hours daily dealing with cancerous animals in a room in which 10,000 of such mice and rats are usually housed at one time. If such a "cancer house" as never before existed has no dangers to human beings who spend their days in it, *a fortiori* other persons have no ground for apprehension that the ubiquity of cancer implies its transmission either directly or indirectly from animals to man, or *vice versâ*. In corresponding observations on mice suffering from spontaneous cancer no case of transference from mouse to mouse has occurred. Cancer is ubiquitous, yet there are the most striking limitations to its conveyance from one individual to another, continued growth taking place after inoculation into animals of the same species only. Inoculation is only successful by the implantation of living cells, but experiments show that this risk is negligible if it exists at all in nature.

Epidemics of cancer have been alleged to occur in the establishments of breeders of rats and mice, notwithstanding that investigations made under the much more satisfactory conditions obtaining for man have not given any statistical evidence of the epidemic or endemic occurrence of the disease. Our experience of such alleged epidemics may be illustrated by the proportions of cases of cancer to total numbers of mice supplied to us by four breeding establishments from Jan. 1st, 1906, to Oct. 21st, 1907:—

Breeding establishments	A.	B.	C.	D.
Tumour mice	10	6	35	18
Total mice	1302	1547	9698	11,842

The number of tumours occurring in these stocks of mice has been determined solely by the number of mice of "cancer-age" under observation. This is brought out particularly clearly in the difference between the age-constitution of the stock of Mr. C. and Mr. D., since the stock of the latter contains constantly a much higher proportion of young animals, and he supplied us with most of our young mice. Further, if we note the dates on which tumours are sent to us and arrange them in columns we find that the crops of tumours coincide with the ageing of groups of mice. Thus those aggregations of cases, loosely called "epidemics," by too enthusiastic advocates of a parasitic origin for cancer, are really evidence of the importance of knowing the age-constitution of the mouse population in which the cases occurred, as pointed out earlier when speaking of the age-incidence of cancer.

METABOLISM AND VITA PROPRIA OF TUMOUR CELLS.

We have often pointed out, from 1903 onwards, that the artificial propagation of cancer gave ideal facilities for studying the problems of its apparently continuous growth, particularly because the same parenchyma could be studied over any requisite length of time and under different experimental conditions. These advantages apply with even greater force to the study of metabolism, and the relations of tumours to their hosts when living under varying experimental conditions. The relation of propagated tumours to the animals bearing them has been shown by Cramer to be analogous to that obtaining between the fœtus *in utero* and the mother, only still greater quantities of tissue are built up. There is no evidence of toxic products injurious to the hosts; on the contrary, there is a compensatorily enhanced activity on their part, as revealed by Cramer's, Copeman's, and Hake's study of the gastric secretion, and by Cramer's investigations on gaseous metabolism. In the end, however, compensation breaks down, and, finally, the tumours live at the expense of the host. When this stage is reached the animals speedily die. It appears that a definite ratio obtains between the weight of tumour and the weight of the animal supporting it without disturbance of health. If the weight of tumour exceeds this relationship, the animal quickly suffers and succumbs. Compensation may be upset much more rapidly by taking advantage of the fact, that the rate of increase of some tumours is proportional to the dose of tumour material inoculated. In this way it can be shown that the terminal result is due to the greater number of the cells demanding food, and not to a greater avidity for it, and that death is not due to poisons.

When very young animals are made to bear rapidly growing tumours they remain dwarfs, the whole increase in weight the animal should show by a given age being made up of tumour. Medigreceanu's analysis of the relations of the different organs to tumour growth shows that when the animal remains a dwarf, individual organs—e.g., the heart, [illegible] tumour. Murray has shown that, when rapidly growing propagable tumours are inoculated into mice with spontaneous tumours which, as is well known, are rarely able to establish themselves in normal mice, the spontaneous tumour of the mouse itself outstrips the propagable tumour. Mice which have cured themselves of rapidly growing tumours, transplantable with ease, have, on the one hand, developed spontaneous tumours of their own, and the latter, on the other hand, could be transplanted into normal mice only with difficulty or not at all. Therefore transplantability is not determined solely by the rate of growth or the degree of avidity for food.

I may merely allude to other detailed investigations which are being conducted by Cramer into the general metabolism and its relation to the chemistry of the cancer cell, and to the fact that the cells of certain of our rapidly growing mouse tumours have been found by Abderhalden, in conjunction with Medigreceanu, to split up some synthetised polypeptides more rapidly than normal tissues do. As yet we have not got much beyond defining that the cancer cell has many of the *properties* of rapidly growing tissue without containing anything extraneous, and without secreting anything directly deleterious to the organism. In these ways, and in a variety of others, our knowledge of the nature of cancer growth and cancer metabolism is being advanced with so great exactness that [illegible] nce of cell equilibrium, [illegible] continuous growth of [illegible] precise conceptions of the process, as the following additional facts on tumour growth already promise. In 1905 we described cyclical alternations in the energy of growth of Jensen's tumour. Since then we have been able to confirm these observations on practically every one of the 60 propagable mouse tumours now growing in the laboratory. The later investigation of the phenomena of the alternation of positive and negative phases of growth has shown that cyclical changes in the cancer cell are revealed in a variety of ways as follows: (1) rise and fall in the percentage of successful inoculations; (2) rapid and slow growth of the tumours in different series, and in the individual tumours of a single series; (3) *transitory cessation of growth*; (4) alternating susceptibility of the tumour cells to dosage, and particularly to the greater or less degree of simultaneous immunisation depending upon the latter; and (5) Murray has drawn attention to cyclical alternations in the histological structure from alveolar to acinous, and *vice versâ*. I exhibit a series of slides illustrating these points in the *vita propria* of tumour cells. It is clear that by these alternating properties of the tumour cells an explanation is afforded of the varied histological picture which different parts of the same tumour often exhibit, as well as of the erratic clinical course of cancer in man. In the human subject there are corresponding fluctuations in the growth of cancer. In one part of a tumour growth is proceeding rapidly, in another part slowly. Periods of exacerbation alternate with periods of amelioration. Further, secondary nodules of growth are known to disappear while others are growing, and occasionally primary growths have disappeared. The observations made on mice emphasise the importance of those clinical features, largely discredited in the human subject, since it was impossible to resolve them into the orderly sequence which the prolonged observation of the growth and structure of propagable tumours has permitted. These studies on the *vita propria* of the cancer cell make it apparent that its secrets are being penetrated gradually. I have already pointed out that of our 60 mammary tumours capable of continuous propagation under uniform experimental conditions not one is a duplicate of another; nevertheless, they all appear to have one feature in common, for the biological properties of their cells alternate in the ways I have enumerated, and therefore something fundamental is revealed by the cyclical fluctuations in their general biological behaviour, structure, and rate of growth. The cyclical alternations in the percentage of successful inoculations and in the negative and positive phases of the rates of growth of the resulting tumours are most impressive. I venture to suggest as an incentive to further investigation the solution of the problem, Are tumour cells, in recovering the enhanced powers of proliferation they exhibit in the positive phase of growth, but imitating the process by which normal cells passed into cancer cells?

Tumour Cells as Indicators of the Nature of the "Soil" Offered Them.

In order to [illegible] veen tumours and [illegible] the behaviour of [illegible] nder varying experimental conditions. The experimental conditions I propose to consider are those that living animals offer. The living cancer cell indicates the condition of the "soil" into which it is implanted—in other words, the cancer cell is the reagent or "indicator," and the living mouse is the test tube containing something to be tested. In all experiments of this kind it is well to bear in mind the distinctions which may, and usually do, obtain between reactions *in vitro* and *in vivo*. The glass test-tube is, or ought to be, indifferent; breaking off a piece and casting it into the contents should not alter the conditions. In the *in vivo* experiments, which are alone possible in the case of cancer, the mouse is the living test-tube and it is not indifferent; removing a piece and, so to say, incorporating it with the contents is not only not an indifferent procedure but, as Woglom has shown, is one of the most efficacious ways of demonstrating certain of the reactions revealed by using the living cancer cell as an "indicator."

I have alluded to the varying qualities of tumour cells even under uniform conditions, and it may seem strange to emphasise their experimental importance when appraising the significance of the results of attempts to modify experimentally the behaviour of a tumour by changing the [illegible] Neverthe- [illegible] the methods [illegible] universally ignored in the race for priority of publishing evidence of immunity against cancer. Much of what has been written on immunity, or resistance of mice to the inoculation of cancer, would not have been published had the authors studied sufficiently the varying qualities of tumour cells and the influences of other uncontrollable and controllable factors as an investigation necessarily preliminary to claiming that they had immunised mice against inoculation, had vaccinated them against its attack, or had actually cured them of it. We spent three years studying the fluctuating growth and other varying qualities of the tumour cells, the influences of dose of tumour, age, and weight of mice, time intervals, and the effect of injuring or actually grinding down tumour and normal tissue in order that our attempts to modify tumour growth should be conducted with the precautions necessary to avoid experimental fallacies. In this way we cleared up the contradictions we had recorded between observations made *in vitro* and *in vivo* with immune sera, as well as accounted for the apparent curative results obtained by injecting immune sera into animals with tumours, before we devoted any communication exclusively to the subject of immunity. When we published definite statements in 1906 Clowes had already claimed (1905) to have demonstrated antibodies directed against the cancer cell, and Ehrlich had set up (1906) the doctrines of atreptic immunity and pan-immunity. Our observations are opposed both to Clowes's and to Ehrlich's interpretations of their experiments. We were able to show at once that immunity to the inoculation of mouse cancer could be produced both by the absorption of cancer tissue and of normal tissue of the mouse, but not by cancer tissue or normal tissue of strange species. We also showed that the resistance which tumour mice showed to a secondary inoculation was actively [illegible] for different tumours. [illegible] sults were arrived [illegible] by employing the [illegible] and came independently to the conclusion that the resistance was specific for different tumours, and Borrel and Bridré have arrived at the same conclusion.

Apparent contradictions still exist between some of our conclusions and those of other workers, but I believe they are mainly, if not wholly, explicable by neglect of some of the precautions we have so often emphasised. Two of these precautions may be alluded to in more detail. The differences obtaining between young and old mice in their suitability for inoculation and growth are very important. You can easily appreciate how, if a tumour is sent from one country to another, and there transplanted into old mice a negative result may be obtained which it would be wrong to assign to differences in race of mice. I show you a chart of such an experiment where some of the difference in the growth of an English tumour in German mice is certainly due to the higher age of the latter. The effect is not so great as to lead to an entirely negative result because the tumour cells were in the positive phase of growth, but on the next slide they are shown in the negative phase of growth and not a single tumour developed in the strange soil. Differences in the mice of different countries exist, however, as the following slide shows, where there is entire absence of growth of an English tumour in young Italian mice. Whether these differences in the mice of different countries are racial differences or are less permanent and due to diet and environment is not yet definitely settled. They do not exist for all tumours, as the slide I show of the growth of Borrel's tumour "B" demonstrates. This French tumour grew at once in 100 per cent. when inoculated into English mice and, as the slide shows, yielded large rapidly growing tumours. It is a general property of all tumours that they grow not so well or not at all in old mice, as the charts I show you demonstrate. You can easily appreciate that if the middle-aged and old mice which were negative to a first inoculation had been reinoculated they would have proved resistant again to any tumour. The resistance would appear to be general, for its specific nature would be concealed. The same appearance of general immunity can be obtained after inoculating the tumours or tissues of strange species of animals into sufficently aged mice.

We have often pointed out the importance of the dose of tumour material inoculated. Together with the consideration of age it merits equally emphatic mention if the results of other investigators are to be harmonised with our own; this applies both to doses used to induce immunity and to doses used to test for its existence. Any dose of tumour will not suffice to produce a new tumour at the site of inoculation. The dose may be too large, so that only transitory growths develop; or it may be too small, so that no growth is evident, as the following charts show. When a tumour develops the dose from which it started is not a matter of indifference if a later inoculation is to be made into the same series of animals. A chart I show demonstrates a diminution in the success of inoculation with diminishing doses, and a corresponding diminution in the degree of resistance of the mice to a second inoculation. The phenomena can be explained only by the primary inoculation having induced an active immunity concomitant with the establishment and the growth of the tumours. This concomitant auto-immunisation may be very perfect, as I show in the next chart taken from Haaland's experiments with our tumour "206." In the case of this tumour it is so complete that every mouse cures itself of its growth. The resistance induced against a reinoculation of the same tumour is more complete than against other tumours. The resistance in this sense is specific and the conditions of growth are also specific since a tumour of different nature, although of the same organ, will grow in mice which are completely protected against a reinoculation of the tumour first inoculated. The lesser degree of protection which one kind of mouse tumour induces against other kinds is due probably not to cancer tissue as such but to its properties *quâ* mouse tissue.

A sarcoma of a cat or rat vaccinated into a mouse lacks the power of protecting it against subsequent inoculation of mouse sarcoma. I show a chart illustrating the absence of immunity when rats have been previously inoculated with cat and with mouse sarcoma. The same holds for corresponding experiments with carcinoma. In short, animals can be rendered unsuitable for the inoculation and growth of cancer only by treating them with malignant new growths or with normal tissues of their own species. In the latter case the degree of resistance corresponds closely to the relationship between the normal tissue vaccinated and the tumour subsequently inoculated. I have a chart showing that skin protects best against skin cancer, and the figures of the site of inoculation in a control and in an immune mouse demonstrate the efficiency of the protection. These facts refer us back again to the transplantation of cancer being limited to animals of their own species, and together with them demonstrate the retention by malignant new growths of the tissue characters of a species. The malignant new growths of different species of animals resemble one another just as much, and differ just as much, as their respective organs and tissues do—e.g., as the liver and lungs of man resemble and differ from those organs of the mouse. The power of normal tissues to induce protection is not restricted to those obtained from other individuals. Woglom has shown that the absorption of a mouse's own tissues—e.g., of the spleen—effectively induces protection against subsequent inoculation.

The parallel between cancerous and normal tissue extends much further. Immunity or resistance is only induced by the inoculation of living tumour cells or of living normal cells. Haaland has made very elaborate investigations on this subject. He has found that cancer tissues and normal tissues are deprived entirely of their powers of inducing resistance if they are frozen and effectively crushed. I illustrate this parallel by a chart showing the protective power of living normal skin and its loss of power to induce protection after being disintegrated in this way. Immunity, therefore, does not appear to be induced by the chemical contents of the cells.

The next chart is of particular interest. It illustrates the action of radium upon normal and cancerous tissues without causing their disintegration. After exposure to radium for an interval within which no structural alteration can be observed in the tissues, either with the naked eye or microscopically, they may be completely deprived of their powers of growing and of immunising. The abolition of these vital properties is here achieved with retention of the histological structure of the tissues and of intactness of the cells, and the experiments demonstrate that the power to elicit these biological reactions is intimately bound up with, and dependent upon, the vital activities of the cells themselves.

Not only does no immunity follow the inoculation of effectively disintegrated material, but, on the contrary, the mice may thereby be made more suited for the growth of tumours. This hypersensitiveness is, however, not so specifically induced as resistance. It can be induced both by tumour and by normal tissue of strange species, and since resistance may follow the absorption of a mouse's own living tissues it is also probable that hypersensitiveness may be induced by its own tissues when properly disintegrated.

The nature of the immunity to cancer is not yet fully elucidated. It has no analogy with anything known for the infective diseases. The hopes of obtaining an anti-cancer serum cautiously expressed by Jensen in 1903 have not yet been fulfilled. Further investigation of the action of the serum of immune animals both *in vitro* and *in vivo* has justified the cautious references we also made to the same subject in 1904 and 1905. Clowes's evidence of the presence of a specific antibody in the serum able to exercise a curative effect *in vivo* and a lethal effect on the tumour cells *in vitro* stands alone. We have never ascribed to the action of antibodies the beneficial effects which Jensen, Clowes, and we ourselves sometimes noted after the injection of the serum of immune animals. The action of immune serum *in vitro* has been found both by Flexner and ourselves to be just as injurious, but not more so, to the cancer cell as is normal serum. It can be now stated with some confidence that animals which are absolutely protected against inoculation do not yield a serum which when introduced into new animals has a power of protecting them against inoculation, still less is there any evidence of immune sera having a power to cure animals of tumours already growing. Highly immune mothers apparently do not transfer immunity to their offspring as do animals immune to diphtheria or other poison of infective disease.

At present artificial resistance can be made efficacious mainly against the inoculation of grafts which speedily die in immunised animals. I show you a picture of the manner in which a normal mouse responds with a new connective-tissue scaffolding, and the contrast that obtains in an immune animal which does not respond in this way. The most evident cause of the death of the grafts is that they cannot grow into an organised tissue and nourish themselves. We have explained the absence of the specific stroma reaction necessary for a graft to *develop into a tumour by assuming* that the chemiotactic properties of the cancer cells are paralysed, so that *they are no longer able to elicit the* specific response on the part of the host. Russell has been able to demonstrate that this is the nature of the process. Working in our laboratory Da Fano has carried Russell's investigations further, and besides confirming that the specific connective-tissue and vascular scaffolding supplied by a normal is not supplied by an immune animal, Da Fano has shown that the entire connective-tissue system of the animal responds during the processes both of spontaneous *healing* and of immunisation. Any subsequent inoculation fails to elicit the response necessary *for* continued growth. *It* is not intended to deny that changes in the blood plasma accompany the acquire*ment* of resistance or immunity, *but* while it is difficult to conceive of so complete a constitutional change *occurring without this intervention, the constitutional* changes throughout the connective tissues prove that changes *in the blood plasma are not solely* responsible, and that the immunity is not purely of a humoral nature but to a large extent cellular. An explanation is thus afforded of the negative results which have hitherto attended all Borrel's, Ehrlich's, Flexner's, Jensen's, and our own attempts to obtain an anti-cancerous serum. I would merely point out that the connective-tissue changes observed in mice during the absorption of tumour tissue are parallel to what has been described for spontaneous healing in man—for example, by Orth.

CONCLUSION.

From a survey of cancer in man and animals the following conclusions stand out. The first confirms that at which Waldeyer arrived in 1867 from his studies on man; the cells of vertebrates—e g., of the skin—possess or acquire some property or properties in common, in virtue of which they may be transformed into cancer cells under what appear to be very different circumstances. The second is the application of the law of age-incidence to vertebrates generally, irrespective of the absolute duration of life. Third, the [illegible] a circumscribed area. Fourth, when all [illegible] in cells within a circum- [illegible] se cells and the organism [illegible] e conclusions the experimental reproduction of all the lesions of cancer has enabled us to add the many others I have related to you.

At this early date it is sufficient to have thrown a little light on four aspects of the etiology of cancer. First, on the constitutional conditions favourable and unfavourable for the growth of cancer cells. Second, on how cancer cells after having passed into a phase of low proliferative energy may re-acquire high powers of proliferation and of resistance to changes in their environment. Third, on the possible nature of the indirect association irritants have to the disease. Fourth, that cancer cells even when of the same organ have been resolved into a larger number of varieties able to maintain their individuality than was previously conceivable. These varieties are of the nature of specialisations or differentiations unrecognisable by histological methods. Experiment has put many older explanations out of court. *No evidence* has been obtained in favour of a hereditary, congenital, or embryonic explanation of etiology, nor has any analogy been discovered with known forms of infective disease. I have illustrated how experiment is resolving the contradictions in the clinical behaviour and in the results of *surgical treatment* of cancer into orderly sequence *If experiment has not solved* many of the old problems, it has replaced them by new ones, which is a *fair* proof that progress is being made.

In the survey I have *given* of the *progress* of the experimental study of *cancer I have* had occasion to draw attention *to the bearing of many of the results* on purely biological *matters, and it is well to conclude* by emphasising the comparative *biological importance* of cancer investigation. [illegible] it possible that portions [illegible] be kept growing for a [illegible] of the whole animal. But [illegible] ds of tissues now being propagated separately make it theoretically possible that the majority of the tissues, *once* they have acquired cancerous properties, may be so grown and *segregated*. *In other* words, a living animal can be analysed into many of its *living component* tissues. The finer relations of various *kinds of tissues to* one another *have* been revealed by the application of the new methods. The biological altera*tions which living* mammalian cells may undergo suddenly, *as* well as gradually, under the influence of experimental *conditions can now* be *studied*. These and many other achievements *in the field of general* biology are the most *important practical fruits which* have accrued from the experimental *study of* cancer, upon which they have only indirect bearings. *Ultimately they* are bound to be of far-reaching general *biological* importance, although to-day they are merely the weapons that have been *forged to* attack cancer. Their *further development* and *their* utilisation for the solution of purely biological problems will probably precede the solution of many of the problems surrounding the nature and causes of cancer.

Having put before you a claim for the value of comparative and experimental investigation with the confidence that it is based on a sure foundation, and evidence that it is advancing our knowledge of the etiology and pathogeny of cancer, I crave your indulgence till time shall enable these methods finally to clear up the cellular problems which they have helped us *to define* so much more *precisely* than ever before.

ABSTRACT OF THE

Presidential Address

Delivered before the British Association for the Advancement of Science at Winnipeg on August 25th, 1909,

BY PROFESSOR SIR J. J. THOMSON, M.A., LL.D., D.Sc., F.R.S.

[IN his opening remarks Professor Thomson referred to the *fact that the* British Association at one time *held all* its meetings in the British Isles, a practice which, however, was first departed *from at its meeting in Montreal* in 1884, and so in that year the Association was changed from an insular into an imperial one. Proceeding, he claimed to have some experience of, at any rate, one branch of Canadian science, for it had been his privilege to receive at the Cavendish Laboratory at Cambridge many students from the Canadian universities. Referring to the educational systems in force in various countries he thought that Canada had been wise not to imitate the system prevailing in the older English universities. The chief evil, he said, from which they at Cambridge suffered and which was avoided in Canada was the excessive competition for scholarships. The result of this, he added, was that preparation for scholarships *dominated the education of the great* majority of the cleverer boys who come to Oxford and Cambridge, *and in some quarters it seems to be held that* the chief duty of a schoolmaster and the best test of his efficiency was to make his boys get scholarships. The result often is that two years before examination the boy begins to specialise, and from the age of 16 he does little else than the subject; be it mathematics, classics, or natural science, for which he wishes to get a scholarship; then on entering the university he spends three or *four* years studying the same subject before he takes his degree which was the proper time for his real *life* work to begin. After pleading [illegible]

Thompson proceeded:—]

It has usually been the practice of the President of this Association to give some account of the progress made in the last few years in the branch of science which he has the honour to represent. I propose this evening to follow that precedent and to attempt to give a very short account of some of the more recent developments of physics, and the new conceptions of physical processes to which they have led. The period which has elapsed since the Association last met in Canada has been one of almost unparalleled activity in many branches of physics, and many new and unsuspected properties of matter and electricity have been discovered. The history of this period affords a remarkable illustration of the effect which may be produced by a single discovery; for it is, I think, to the discovery of the Roentgen rays that we owe the rapidity of the progress which has recently been made in physics. A striking discovery like that of the Roentgen rays acts much like the discovery of gold in a sparsely-populated country; it attracts workers who come in the first place for the gold, but who may find that the country has other products, other charms, perhaps even more valuable than the gold itself. The country in which the gold was discovered in the case of the Roentgen rays was the department of physics dealing with the discharge of electricity through gases, a subject which, almost from the beginning of electrical science, has attracted a few enthusiastic workers, who felt convinced that the key to unlock the secret of electricity was to be found in a vacuum tube. Roentgen, in 1895, showed that when electricity passed through such a tube, the tube emitted rays which could pass through bodies opaque to ordinary light; which could, for example, pass through the flesh of the body and throw a shadow of the bones on a suitable screen. The fascination of this discovery attracted many workers to the subject of the discharge of electricity through gases, and led to great improvements in the instruments used in this type of research. It is not, however, to the power of probing dark places, important though this is, that the influence of Roentgen rays on the progress of science has mainly been due; it is rather because these rays make gases, and, indeed, solids and liquids, through which they pass conductors of electricity. It is true that before the discovery of these rays other methods of making gases conductors were known, but none of these was so convenient for the purposes of accurate measurement. The study of gases exposed to Roentgen rays has revealed in such gases the presence of particles charged with electricity; some of these particles are charged with positive, others with negative, electricity. The properties of these particles have been investigated; we know the charge they carry, the speed with which they move under an electric force, the rate at which the oppositely charged ones recombine, and these investigations have thrown a new light, not only on electricity, but also on the structure of matter.

We know from these investigations that electricity, like matter, is molecular in structure, that just as a quantity of hydrogen is a collection of an immense number of small particles called molecules, so a charge of electricity is made up of a great number of small charges, each of a perfectly definite and known amount. Helmholtz said in 1880 that in his opinion the evidence in favour of the molecular constitution of electricity was even stronger than that in favour of the molecular constitution of matter. How much stronger is that evidence now, when we have measured the charge on the unit and found it to be the same from whatever source the electricity is obtained. Nay, further, the molecular theory of matter is indebted to the molecular theory of electricity for the most accurate determination of its fundamental quantity, the number of molecules in any given quantity of an elementary substance.

The great advantage of the electrical methods for the study of the properties of matter is due to the fact that whenever a particle is electrified it is very easily identified, whereas an uncharged molecule is most elusive; and it is only when these are present in immense numbers that we are able to detect them. A very simple calculation will illustrate the difference in our power of detecting electrified and unelectrified molecules. The smallest quantity of unelectrified matter ever detected is probably that of neon, one of the inert gases of the atmosphere. Professor Strutt has shown that the amount of neon in $\frac{1}{20}$ of a cubic centimetre of the air at ordinary pressures can be detected by the spectroscope; Sir William Ramsay estimates that the neon in the air only amounts to 1 part of neon in 100,000 parts of air, so that the neon in $\frac{1}{20}$ of a cubic centimetre of air would only occupy at atmospheric pressure a volume of half a millionth of a cubic centimetre. When stated in this form the quantity seems exceedingly small, but in this small volume there are about ten million million molecules. Now the population of the earth is estimated at about fifteen hundred millions, so that the smallest number of molecules of neon we can identify is about 7000 times the population of the earth. In other words, if we had no better test for the existence of a man than we have for that of an unelectrified molecule we should come to the conclusion that the earth is uninhabited. Contrast this with our power of detecting electrified molecules. We can by the electrical method, even better by the cloud method of C. T. R. Wilson, detect the presence of three or four charged particles in a cubic centimetre. Rutherford has shown that we can detect the presence of a single α particle. Now the particle is a charged atom of helium; if this atom had been uncharged we should have required more than a million million of them, instead of one, before we should have been able to detect them. We may, I think, conclude, since electrified particles can be studied with so much greater ease than unelectrified ones, that we shall obtain a knowledge of the ultimate structure of electricity before we arrive at a corresponding degree of certainty with regard to the structure of matter.

We have already made considerable progress in the task of discovering what the structure of electricity is. We have known for some time that of one kind of electricity—the negative—and a very interesting one it is. We know that negative electricity is made up of units all of which are of the same kind; that these units are exceedingly small compared with even the smallest atom, for the mass of the unit is only $\frac{1}{1700}$ part of the mass of an atom of hydrogen; that its radius is only 10^{-13} centimetre, and that these units, "corpuscles" as they have been called, can be obtained from all substances. The size of these corpuscles is on an altogether different scale from that of atoms; the volume of a corpuscle bears to that of the atom about the same relation as that of a speck of dust to the volume of this room. Under suitable conditions they move at enormous speeds which approach in some instances the velocity of light. The discovery of these corpuscles is an interesting example of the way Nature responds to the demands made upon her by mathematicians. Some years before the discovery of corpuscles it had been shown by a mathematical investigation that the mass of a body must be increased by a charge of electricity. This increase, however, is greater for small bodies than for large ones, and even bodies as small as atoms are hopelessly too large to show any appreciable effect; thus the result seemed entirely academic. After a time corpuscles were discovered, and these are so much smaller than the atom that the increase in mass due to the charge becomes not merely appreciable but so great that, as the experiments of Kaufmann and Bucherer have shown, the whole of the mass of the corpuscle arises from its charge.

We know a great deal about negative electricity; what do we know about positive electricity? Is positive electricity molecular in structure? Is it made up into units, each unit carrying a charge equal in magnitude though opposite in sign to that carried by a corpuscle? Does, or does not, this unit differ, in size and physical properties, very widely from the corpuscle? We know that by suitable processes we can get corpuscles out of any kind of matter, and that the corpuscles will be the same from whatever source they may be derived. Is a similar thing true for positive electricity? Can we get, for example, a positive unit from oxygen of the same kind as that we get from hydrogen? For my own part, I think the evidence is in favour of the view that we can, although the nature of the unit of positive electricity makes the proof much more difficult than for the negative unit. In the first place we find that the positive particles—"canalstrahlen" is their technical name—discovered by our distinguished guest, Dr. Goldstein, which are found when an electric discharge passes through a highly rarefied gas, are, when the pressure is very low, the same, whatever may have been the gas in the vessel to begin with. If we pump out the gas until the pressure is too low to allow the discharge to pass, and then introduce a small quantity of gas and restart the discharge, the positive particles are the same whatever kind of gas may have been introduced. I have, for example, put into the exhausted vessel oxygen, argon, helium, the vapour of carbon tetrachloride, none of which contain hydrogen, and found the positive particles to be the same as when hydrogen was introduced.

Some experiments made lately by Wellisch in the Cavendish Laboratory strongly support the view that there is a definite unit of positive electricity independent of the gas from which it is derived; these experiments were on the velocity with which positive particles move through mixed gases. If we have a mixture of methyl-iodide and hydrogen exposed to Roentgen rays, the effect of the rays on the methyl-iodide is so much greater than on the hydrogen that, even when the mixture contains only a small percentage of methyl-iodide, practically all the electricity comes from this gas, and not from the hydrogen. Now if the positive particles were merely the residue left when a corpuscle had been abstracted from the methyl-iodide, these particles would have the dimensions of a molecule of methyl-iodide; this is very large and heavy, and would therefore move more slowly through the hydrogen molecules than the positive particles derived from hydrogen itself, which would, on this view, be of the size and weight of the light hydrogen molecules. Wellisch found that the velocities of both the positive and negative particles through the mixture were the same as the

chloride, or mercury methyl, was used instead of methyl-iodide. These and similar results lead to the conclusion that the atom of the different chemical elements contains definite units of positive as well as of negative electricity, and that the positive electricity, like the negative, is molecular in structure.

The investigations made on the unit of positive electricity show that it is of quite a different kind from the unit of negative: the mass of the negative unit is exceedingly small compared with any atom, the only positive units that up to the present have been detected are quite comparable in mass with the mass of an atom of hydrogen; in fact, they seem equal to it. This makes it more difficult to be certain that the unit of positive electricity has been isolated, for we have to be on our guard against its being a much smaller body attached to the hydrogen atoms which happen to be present in the vessel. If the positive units have a much greater mass than the negative ones, they ought not to be so easily deflected by magnetic forces when moving at equal speeds; and in general the insensibility of the positive particles to the influence of a magnet is very marked; though there are cases where the positive particles are much more readily deflected, and these have been interpreted as proving the existence of positive units comparable in mass with the negative ones. I have found, however, that in these cases the positive particles are moving very slowly, and that the ease with which they are deflected is due to the smallness of the velocity and not to that of the mass. It should, however, be noted that M. Jean Becquerel has observed in the absorption spectra of some minerals, and Professor Wood in the rotation of the plane of polarisation by sodium vapour, effects which could be explained by the presence in the substances of positive units comparable in mass with corpuscles. This, however, is not the only explanation which can be given of these effects, and at present the smallest positive electrified particles of which we have direct experimental evidence have masses comparable with that of an atom of hydrogen.

A knowledge of the mass and size of the two units of electricity, the positive and the negative, would give us the material for constructing what may be called a molecular theory of electricity, and would be a starting-point for a theory of the structure of matter; for the most natural view to take, as a provisional hypothesis, is that matter is just a collection of positive and negative units of electricity, and that the forces which hold atoms and molecules together, the properties which differentiate one kind of matter from another, all have their origin in the electrical forces exerted by positive and negative units of electricity, grouped together in different ways in the atoms of the different elements. As it would seem that the units of positive and negative electricity are of very different sizes, we must regard matter as a mixture containing systems of very different types, one type corresponding to the small corpuscle the other to the large positive unit.

Since the energy associated with a given charge is greater the smaller the body on which the charge is concentrated, the energy stored up in the negative corpuscles will be far greater than that stored up by the positive. The amount of energy which is stored up in ordinary matter in the form of the electrostatic potential energy of its corpuscles is, I think, not generally realised. All substances give out corpuscles, so that we may assume that each atom of a substance contains at least one corpuscle. From the size and the charge on the corpuscle, both of which are known, we find that each corpuscle has 8×10^{-7} ergs of energy; this is on the supposition that the usual expressions for the energy of a charged body hold when, as in the case of a corpuscle, the charge is reduced to one unit. Now in one gramme of hydrogen there are about 6×10^{23} atoms, so if there is only one corpuscle in each atom the energy due to the corpuscles in a gramme of hydrogen would be 48×10^{16} ergs, or 11×10^{9} calories. This is more than seven times the heat developed by one gramme of radium, or than that developed by the burning of five tons of coal. Thus we see that even ordinary matter contains enormous stores of energy; this energy is fortunately kept fast bound by the corpuscles; if at any time an appreciable fraction were to get free the earth would explode and become a gaseous nebula.

The matter of which I have been speaking so far is the material which builds up the earth, the sun, and the stars, the matter studied by the chemist, and which he can represent by a formula; this matter occupies, however, but an insignificant fraction of the universe. It forms but minute islands in the great ocean of the ether, the substance with which the whole universe is filled. The ether is not a fantastic creation of the speculative philosopher; it is as essential to us as the air we breathe. For we must remember that we on this earth are not living on our own resources; we are dependent from minute to minute upon what we are getting from the sun, and the gifts of the sun are conveyed to us by the ether. It is to the sun that we owe not merely night and day, springtime and harvest, but it is the energy of the sun, stored up in coal, in waterfalls, in food, that practically does all the work of the world. How great is the supply the sun lavishes upon us becomes clear when we consider that the heat received by the earth under a high sun and a clear sky is equivalent, according to the measurements of Langley, to about 7000 horse-power per acre. Though our engineers have not yet discovered how to utilise this enormous supply of power, they will, I have not the slightest doubt, ultimately succeed in doing so; and when coal is exhausted and our water-power inadequate, it may be that this is the source from which we shall derive the energy necessary for the world's work. When that comes about our centres of industrial activity may perhaps be transferred to the burning deserts of the Sahara, and the value of land determined by its suitability for the reception of traps to catch sunbeams. This energy, in the interval between its departure from the sun and its arrival at the earth, must be in the space between them. Thus this space must contain something which, like ordinary matter, can store up energy, which can carry at an enormous pace the energy associated with light and heat, and which can, in addition, exert the enormous stresses necessary to keep the earth circling round the sun and the moon round the earth. The study of this all-pervading substance is perhaps the most fascinating and important duty of the physicist.

On the electro-magnetic theory of light, now universally accepted, the energy streaming to the earth travels through the ether in electric waves; thus practically the whole of the energy at our disposal has at one time or another been electrical energy. The ether must, then, be the seat of electrical and magnetic forces. We know, thanks to the genius of Clerk Maxwell, the founder and inspirer of modern electrical theory, the equations which express the relation between these forces, and although for some purposes these are all we require, yet they do not tell us very much about the nature of the ether. Is the ether dense or rare? Has it a structure? Is it at rest or in motion? are some of the questions which force themselves upon us.

Let us consider some of the facts known about the ether. When light falls on a body and is absorbed by it, the body is pushed forward in the direction in which the light is travelling, and if the body is free to move it is set in motion by the light. Now it is a fundamental principle of dynamics that when a body is set moving in a certain direction, or, to use the language of dynamics, acquires momentum in that direction, some other mass must lose the same amount of momentum; in other words, the amount of momentum in the universe is constant. Thus when the body is pushed forward by the light some other system must have lost the momentum the body acquires, and the only other system available is the wave of light falling on the body; hence we conclude that there must have been momentum in the wave in the direction in which it is travelling. Momentum, however, implies mass in motion. We conclude, then, that in the ether through which the wave is moving there is mass moving with the velocity of light. The experiments made on the pressure due to light enable us to calculate this mass, and we find that in a cubic kilometre of ether carrying light as intense as sunlight is at the surface of the earth, the mass moving is only about one-fifty-millionth of a milligramme. We must be careful not to confuse this with the mass of a cubic kilometre of ether; it is only the mass moved when the light passes through it; the vast majority of the ether is left undisturbed by the light. Now, on the electro-magnetic theory of light, a wave of light may be regarded as made up of groups of lines of electric force moving with the velocity of light; and if we take this point of view we can prove that the mass of ether per cubic centimetre carried along is proportional to the energy possessed by these lines of electric force per cubic centimetre, divided by the square of the velocity of light. But though lines of electric force carry some of the ether along with them as they move, the amount so carried, even in the strongest electric fields we can produce, is but a minute fraction of the ether in their neighbourhood. This is proved by an experiment made by Sir Oliver Lodge in which light was made to travel through an electric field in rapid motion. If the electric field had carried the whole of the ether with it, the velocity of the light would have been increased by the velocity of the electric field. As a matter of fact, no increase whatever could be detected, though it would have been registered if it had amounted to one-thousandth part of that of the field.

The ether carried along by a wave of light must be an exceedingly small part of the volume through which the wave is spread. Parts of this volume are in motion, but by far the greater part is at rest; thus, in the wave front there cannot be uniformity, at some parts the ether is moving, at others it is at rest—in other words, the wave front must be more analogous to bright specks on a dark ground than to a uniformly illuminated surface. The place where the density of the ether carried along by an electric field rises to its highest value is close to a corpuscle, for round the corpuscles are by far the strongest electric fields of which we have any knowledge. We know the mass of the corpuscle; we know from Kaufmann's experiments that this arises entirely from the electric charge, and is therefore due to the ether carried along with the corpuscle by the lines of force attached to it. A simple calculation shows that one-half of this mass is contained in a volume seven times that of a corpuscle. Since we know the volume of the corpuscle as well as the mass, we can calculate the density of the ether attached to the corpuscle; doing so, we find it amounts to the prodigious value of about 5×10^{10}, or about 2000 million times that of lead. Sir Oliver Lodge, by somewhat different considerations, has arrived at a value of the same order of magnitude. Thus around the corpuscle ether must have an extravagant density: whether the density is as great as this in other places depends upon whether the ether is compressible or not. If it is compressible, then it may be condensed round the corpuscles, and there have an abnormally great density; if it is not compressible, then the density in free space cannot be less than the number I have just mentioned.

With respect to this point we must remember that the forces acting on the ether close to the corpuscle are prodigious. If the ether were, for example, an ideal gas whose density increased in proportion to the pressure, however great the pressure might be, then if, when exposed to the pressures which exist in some directions close to the corpuscle, it had the density stated above, its density under atmospheric pressure would only be about 8×10^{-16}, or a cubic kilometre would have a mass less than a gramme; so that instead of being almost incomparably denser than lead it would be almost incomparably rarer than the lightest gas. I do not know at present of any effect which would enable us to determine whether ether is compressible or not. And although at first sight the idea that we are immersed in a medium almost infinitely denser than lead might seem inconceivable, it is not so if we remember that in all probability matter is composed mainly of holes. We may, in fact, regard matter as possessing a bird-cage kind of structure in which the volume of the ether disturbed by the wires when the structure is moved is infinitesimal in comparison with the volume enclosed by them. If we do this, no difficulty arises from the great density of the ether; all we have to do is to increase the distance between the wires in proportion as we increase the density of the ether.

[After discussing the nature of potential energy, Professor Thomson proceeded:—]

We may thus regard the ether as a bank in which we may deposit energy and withdraw it at our convenience. The mass of the ether attached to the system will change as the potential energy changes, and thus the mass of a system whose potential energy is changing cannot be constant; the fluctuations in mass under ordinary conditions are, however, so small that they cannot be detected by any means at present at our disposal. Inasmuch as the various forms of potential energy are continually being changed into heat energy, which is the kinetic energy of the molecules of matter, there is a constant tendency for the mass of a system such as the earth or the sun to diminish, and thus as time goes on for the mass of ether gripped by the material universe to become smaller and smaller; the rate at which it would diminish would, however, get slower as time went on, and there is no reason to think that it would ever get below a very large value.

As our knowledge of the properties of light has progressed we have been driven to recognise that the ether when transmitting light possesses properties which, before the introduction of the electro-magnetic theory, would have been thought to be peculiar to an emission theory of light and to be fatal to the theory that light consists of undulations. Take, for example, the pressure exerted by light. This would follow as a matter of course if we supposed light to be small particles moving with great velocities, for these, if they struck against a body would manifestly tend to push it forward, while on the undulatory theory there seemed no reason why any effect of this kind should take place. Indeed, in 1792 this very point was regarded as a test between the theories, and Bennet made experiments to see whether or not he could find any traces of this pressure. We now know that the pressure is there, and if Bennet's instrument had been more sensitive he must have observed it. It is perhaps fortunate that Bennet had not at his command more delicate apparatus. Had he discovered the pressure of light it would have shaken confidence in the undulatory theory and checked that magnificent work at the beginning of the last century which so greatly increased our knowledge of optics.

[After referring to the recent remarkable series of investigations on the thermodynamics of radiation, Professor Thomson pointed out that the principles that radiation is made up of units and that it requires a unit possessing a definite amount of energy to excite radiation in a body on which it falls, receive perhaps their best illustration in the remarkable laws governing secondary Roentgen radiation recently discovered by Professor Barkla. Professor Barkla has found that each of the different chemical elements, when exposed to Roentgen rays, emit a definite type of secondary radiation, whatever may have been the type of primary, thus lead emits one type, copper another, and so on; but these radiations are not excited at all if the primary radiation is of a softer type than the specific radiation emitted by the substance; thus the secondary radiation from lead is harder than that from copper, and if copper is exposed to the secondary radiation from lead the copper will radiate, but lead will not radiate when exposed to copper. If we suppose, therefore, that the energy in a unit of hard Roentgen rays is greater than in one of soft, Barkla's results are strikingly analogous to those which would follow on the unit theory of light. Professor Thomson then passed to a very brief consideration of "one of the most important and interesting advances ever made in physics, and in which Canada, as the place of the labours of Professor Rutherford and Professor Soddy, has taken a conspicuous part." He continued:—]

I mean the discovery and investigation of radio-activity. Radio-activity was brought to light by the Roentgen rays. One of the many remarkable properties of these rays is to excite phosphorescence in certain substances, including the salts of uranium, when they fall upon them. Since Roentgen rays produce phosphorescence, it occurred to Becquerel to try whether phosphorescence would produce Roentgen rays. He took some uranium salts which had been made to phosphoresce by exposure, not to Roentgen rays but to sunlight, tested them, and found that they gave out rays possessing properties similar to Roentgen rays. Further investigation showed, however, that to get these rays it was not necessary to make the uranium phosphoresce, that the salts were just as active if they had been kept in the dark. It thus appeared that the property was due to the metal and not to the phosphorescence, and that uranium and its compounds possessed the power of giving out rays which, like Roentgen rays, affect a photographic plate, make certain minerals phosphoresce, and make gases through which they pass conductors of electricity. Niepce de Saint-Victor had observed some years before this discovery that paper soaked in a solution of uranium nitrate affected a photographic plate, but the observation excited but little interest. The ground had not then been prepared, by the discovery of the Roentgen rays, for its reception, and it withered and was soon forgotten. Shortly after Becquerel's discovery of uranium, Schmidt found that thorium possessed similar properties. Then Monsieur and Madame Curie, after a most difficult and laborious investigation, discovered two new substances, radium and polonium, possessing this property to an enormously greater extent than either thorium or uranium, and this was followed by the discovery of actinium by Debierne. Now the researches of Rutherford and others have led to the discovery of so many new radio-active substances that any attempts at christening seems to have been abandoned, and they are denoted, like policemen, by the letters of the alphabet.

Mr. Campbell has recently found that potassium, though far inferior in this respect to any of the substances I have named, emits an appreciable amount of radiation, the amount depending only on the quantity of potassium, and being the same whatever the source from which the potassium is obtained or whatever the elements with which it may be in combination. The radiation emitted by these substances is of three types, known as α, β, and γ rays. The α rays have been shown by Rutherford to be positively electrified atoms of helium, moving with speeds which reach up to about one-tenth of the velocity of light. The β rays are negatively electrified corpuscles, moving in some cases with very nearly the velocity of light itself, while the γ rays are unelectrified, and are analogous to the Roentgen rays. The radio-activity of uranium was shown by Crookes to arise from something mixed with the uranium, and which differed sufficiently in properties from the uranium itself to enable it to be separated by chemical analysis. He took some uranium, and by chemical treatment separated it into two portions, one of which was radio-active and the other not. Next Becquerel found that if these two portions were kept for several months the part which was not radio-active to begin with regained radio-activity, while the part which was radio-active to begin with had lost its radio-activity. These effects and many others receive a complete explanation by the theory of radio-active change which we owe to Rutherford and Soddy. According to this theory the radio-active elements are not permanent, but are gradually breaking up into elements of lower atomic weight; uranium, for example, is slowly breaking up, one of the products being radium, while radium breaks up into a radio-active gas called radium emanation, the emanation into another radio-active substance, and so on, and that the radiations are a kind of swan's song emitted by the atoms when they pass from one form to another; that, for example, it is when a radium atom breaks up and an atom of the emanation appears that the rays which constitute the radio-activity are produced. Thus, on this view the atoms of the radio-active elements are not immortal; they per [illegible] life whose average value ranges from thousands of [illegible] years in the case of uranium to a second or so in [illegible] the gaseous emanation from actinium. When the atoms pass from one state to another they give out large stores of energy; thus their descendants do not inherit the whole of their wealth of stored-up energy, the estate becomes less and less wealthy with each generation; we find, in fact, that the politician, when he imposes death duties, is but imitating a process which has been going on for ages in the case of these radio-active substances.

Many points of interest arise when we consider the rate at which the atoms of radio-active substance disappear. Rutherford has shown that whatever be the age of these [illegible] atoms which disappear in one [illegible] another way of putting it is that [illegible] atom is independent of its age—that an atom of radium 1000 years old is just as likely to live for another thousand years as one just sprung into existence. Now this would be the case if the death of the atom were due to something from outside which struck old and young indiscriminately; in a battle, for example, the chance of being shot is the same for old and young; so that we are inclined at first to look to something coming from outside as the cause why an atom of radium, for example, suddenly changes into an atom of the emanation. But here we are met with the difficulty that no changes in the external conditions that we have as yet been able to produce have had any effect on the life of the atom; as far as we know at present the life of a radium atom is the same at the temperature of a furnace as at that of liquid air—it is not altered by surrounding the radium by thick screens of lead or other dense materials to ward off radiation from outside; and what to my mind is especially significant, it is the same when the radium is in the most concentrated form, when its atoms are [illegible] the rays given off [illegible] in the most dilute [illegible] the water which separates one atom from another. This last result seems to me to make it somewhat improbable that we shall be able to split up the atoms of the non-radio-active elements by exposing them to the radiation from radium; if this radiation is unable to affect the unstable radio-active atoms, it is somewhat unlikely that it will be able to affect the much more stable non-radio-active elements.

The evidence we have at present is against a disturbance coming from outside breaking up of the radio-active atoms, and we must therefore look to some process of decay in the atom itself; but if this is the case, how are we to reconcile it with the fact that the expectation of life of an atom does not diminish as the atom gets older? We can do this if we suppose that the atoms when they are first produced have not all the same strength of constitution, that some are more robust than others, perhaps because they contain more intrinsic energy to begin with, and will therefore have a longer life. Now if when the atoms are first produced there are some which will live for one year, some for ten, some for a thousand, and so on; and if lives of all durations, from nothing to infinity [illegible] that the number of atoms [illegible] a certain number of years [illegible] for each additional year of life, we can easily prove that the expectation of life of an atom will be the same whatever its age may be. On this view the different atoms of a radio-active substance are not in all respects identical.

The energy developed by radio-active substances is exceedingly large, one gramme of radium developing nearly as much energy as would be produced by burning a ton of coal. This energy is mainly in the α particles, the positively charged helium atoms which are emitted when the change in the atom takes place; if this energy were produced by electrical forces it would indicate that the helium atom had moved through a potential difference of about two million volts on its way out of the atom of radium. The source of this energy is a problem of the deepest interest; if it arises from the repulsion of similarly electrified systems exerting forces varying inversely as the square of the distance, then to get the requisite amount of energy the systems, if their charges were comparable with the charge on the α particle, could not when they start be further apart than the radius of a corpuscle, 10^{-13} centimetres. If we suppose that the particles do not acquire this energy at the explosion, but [illegible] they are shot out of the radium atom they move [illegible] with the speed with which they [illegible] to prevent particles moving with this velocity from flying off at a tangent are so great that finite charges of electricity could only produce them at distances comparable with the radius of a corpuscle.

One method by which the requisite amount of energy could be obtained is suggested by the view to which I have already alluded—that in the atom we have electrified systems of very different types, one small, the other large; the radius of one type [illegible] 10^{-13} centimetres, that of the other [illegible] The electrostatic potential [illegible]es is enormously greater than that in the larger ones; if one of [illegible] explode and expand to the size of [illegible]ration of energy large [illegible] the energy it possesses. Is it possible that the [illegible] of electricity were, to begin with, quite as small as the negative, but while in the course of ages most of these have passed from the smaller stage to the larger, there are some small ones still lingering in radio-active substances, and it is the explosion of these which liberates the energy set free during radio active transformation?

The properties of radium have consequences of enormous importance to the geologist as well as to the physicist or chemist. In fact, the discovery of these properties has entirely altered the aspect of one of the most interesting geological problems, that of the age of the earth. Before the discovery of radium it was supposed that the supplies of heat furnished by chemical changes going on in the earth were quite insignificant, and that there was nothing to replace the heat which flows from the hot interior of the earth to the colder crust. Now when the earth first solidified it only possessed a certain amount of capital in the form of heat, and if it is continually spending this capital and not gaining any fresh heat it is evident that the process cannot have been going on for more than a certain number of years, otherwise the earth would be colder than it is. Lord Kelvin in this way estimated the age of the earth to be less than 100 million years. Though the quantity of radium in the earth is an exceedingly small fraction of the mass of the earth, only amounting, according to the determinations of Professor Strutt and Professor Joly, to about five grammes in a cube whose side is 100 miles, yet the amount of heat given out by this small quantity of radium is so great that it is more than enough to replace the heat which flows from the inside to the outside of the earth. This, as Rutherford has pointed out, entirely vitiates the previous method of determining the age of the earth. The fact is that the radium gives out so much heat that we do not quite know what to do with it, for if there was as much radium throughout the interior of the earth as there is in its crust, the temperature of the earth would increase much more rapidly than it does as we descend below the earth's surface. Professor Strutt has shown that if radium behaves in the interior of the earth as it does at the surface, rocks similar to those in the earth's crust cannot extend to a depth of more than 45 miles below the surface.

It is remarkable that Professor Milne from the study of earthquake phenomena had previously come to the conclusion that rocks similar to those at the earth's surface only descend a short distance below the surface; he estimates this distance at about 30 miles, and concludes that at a depth greater than this the earth is fairly homogeneous. Though the discovery of radio-activity has taken away one method of calculating the age of the earth it has supplied another. The gas helium is given out by radio-active bodies, and since, except in beryls, it is not found in minerals which do not contain radio-active elements, it is probable that all the helium in these minerals has come from these elements. In the case of a mineral containing uranium, the parent of radium in radio-active equilibrium, with radium and its products, helium will be produced at a definite rate. Helium, however, unlike the radio-active elements, is permanent and accumulates in the mineral; hence if we measure the amount of helium in a sample of rock and the amount produced by the sample in one year we can find the length of time the helium has been accumulating, and hence the age of the rock. This method, which is due to Professor Strutt, may lead to determinations not merely of the average age of the crust of the earth, but of the ages of particular rocks and the date at which the various strata were deposited; he has, for example, shown in this way that a specimen of the mineral thorianite must be more than 240 million years old.

The physiological and medical properties of the rays emitted by radium is a field of research in which enough has already been done to justify the hope that it may lead to considerable alleviation of human suffering. It seems quite definitely established that for some diseases, notably rodent ulcer, treatment with these rays has produced remarkable cures; it is imperative, lest we should be passing over a means of saving life and health, that the subject should be investigated in a much more systematic and extensive manner that there has yet been either time or material for. Radium is, however, so costly that few hospitals could afford to undertake pioneering work of this kind; fortunately, however, through the generosity of Sir Ernest Cassel and Lord Iveagh a radium institute, under the patronage of His Majesty the King, has been founded in London for the study of the medical properties of radium, and for the treatment of patients suffering from diseases for which radium is beneficial. The new discoveries made in physics in the last few years, and the ideas and potentialities suggested by them, have had an effect upon the workers in that subject akin to that produced in literature by the Renaissance. Enthusiasm has been quickened, and there is a hopeful, youthful, perhaps exuberant, spirit abroad which leads men to make with confidence experiments which would have been thought fantastic 20 years ago. It has quite dispelled the pessimistic feeling, not uncommon at that time, that all the interesting things had been discovered, and all that was left was to alter a decimal or two in some physical constant. There never was any justification for this feeling, there never were any signs of an approach to finality in science. The sum of knowledge is at present, at any rate, a diverging not a converging series. As we conquer peak after peak we see in front of us regions full of interest and beauty, but we do not see our goal, we do not see the horizon; in the distance tower still higher peaks, which will yield to those who ascend them still wider prospects, and deepen the feeling, whose truth is emphasised by every advance in science, that "Great are the Works of the Lord."

EXPERIENCES IN THE TREATMENT OF DISTAL PARALYSES BY NERVE ANASTOMOSIS.[1]

BY A. H. TUBBY, M.S. LOND., F.R.C.S. ENG.,

SURGEON TO THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL AND THE WESTMINSTER HOSPITAL; CONSULTING SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

WHEN a new procedure is introduced its justification largely depends upon the selection of suitable cases and a keen determination to avoid possible sources of fallacy. Therefore before we decide upon so radical an operation as nerve anastomosis we must be sure that irrecoverable paralysis is present. To take an example—anterior poliomyelitis. Muscles which appear to be hopelessly inert will under appropriate treatment show signs of recovery. By appropriate conditions we mean rest, relaxation of tension thrown upon them by secondary deformity, and the use of massage and electricity. Therefore it may be definitely laid down that no case of paralysis is suitable for nerve grafting until the usual remedial means just indicated have been continuously carried out under skilled observation for at least three months, and until it is quite clear that faradic excitability of the muscles is entirely lost. It is impossible when a case first comes under observation to forecast what amount of recovery will take place with electrical and mechanical treatment. I have many times taken cases into hospital which appeared to be eminently suitable for the operation, but after three months' systematic treatment it was found that such a degree of recovery had taken place as to render surgical interference unnecessary. In the instances shortly to be related all sources of fallacy of the nature just alluded to have been avoided.

The literature of nerve grafting is extensive, and is to be found in my publications, in the *Medical Annual* and elsewhere. But mention must be made of the pioneer work of Langley, Sherrington, Sherren, and especially of Kilvington, whose researches on dogs have not only been of service in indicating the lines of procedure, but have also by their success encouraged us to apply them to surgery. Honourable mention must be made of Spitzy, Young of Philadelphia, and of Peckham, but in regard to Kennedy special mention is called for, because he showed that when the flexor and extensor nerve supply of a limb are interchanged, stimulation of the cortical flexor-centre produces extension and *vice versâ*, thus proving that the nature of the movement depends not on the cortical cells but on the terminal arrangement of the nerves and muscles. The cortical centre supplies the muscles, whilst the nature of the movement is governed by the distribution of the nerves and the origin and insertion of the muscles.

The types of paralyses for which I have performed anastomosis are (1) traumatic and (2) infantile paralysis. The total number of cases operated upon is eight. These cases have been watched for a period of not less than three years since the operation, and therefore we are now able to report the result after a prolonged period of observation.

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[1] A paper read at the International Medical Congress held at Budapest, 1909.

They have also been demonstrated at the Clinical Society of London and the Royal Society of Medicine.

I.—TRAUMATIC CASES.

CASE 1. *Facio-hypoglossal anastomosis following an operation.*—A man, aged 19 years, was admitted under my care into Westminster Hospital on Oct. 3rd, 1905, suffering from facial paralysis, which had followed the opening of a glandular abscess just behind the jaw. The surgeon had made a vertical incision, and completely divided the facial nerve just behind the ascending ramus of the jaw six months previously. The left side of the face was completely paralysed, and there was no response whatever to faradic stimulation. The left angle of the mouth dropped, the tongue deviated to the right, and he had lost the sensation of taste on the anterior part of the left side of the tongue. Epiphora of the left eye was present, and he dribbled somewhat from the left side of the mouth. He was unable to close the left eye at all, food accumulated in the left cheek, and when he smiled the mouth was drawn over to the right side. It was noticed that the hair grew more abundantly on the left than on the right side.

On Oct. 16th an incision was made from the tip of the mastoid process to the greater cornu of the hyoid bone, and a dissection was undertaken to find the distal part of the facial nerve. It was evident that it had been severed subsequently to its division into two main trunks, the cervico- and temporo-facial. With great difficulty these two nerve trunks were found, and the hypoglossal nerve was then exposed. The digastric and stylohyoid muscles were then removed, and the hypoglossal nerve pulled well up until it approximated to the distal facial trunks. Two small incisions were then made into the shaft of the hypoglossal nerve, and the facial trunks were inserted and stitched in place. The head and neck were fixed in plaster-of-Paris so as to permit no tension whatever being put upon the anastomosis. One week after the operation signs of recovery appeared. The patient could partially close the left eye. Gradually all the paralysed muscles recovered their power, and when the case was shown before the Royal Society of Medicine of London in March, 1909, it was difficult to distinguish which side of the face had been affected, except that there was a very slight droop at the left angle of the mouth. All movements and functions were perfect. It was also noticed that there was a total absence of associated movements of the tongue and face, that the left half of the tongue was not wasted, and that the tongue could be protruded directly without any deviation.

CASE 2. *Severe laceration of the supraclavicular part of the* [illegible] *the right arm; nerve* [illegible] ged 25 years, a sailor, [illegible] ust 20th, 1905, he was thrown against the bulwarks of a Transatlantic liner. He was picked up unconscious, and the right arm was limp and flaccid. When the ship arrived at New York the patient was still unconscious. He was taken to a hospital there and was trephined over the Rolandic area under the impression that he was suffering from meningeal hæmorrhage, but the trephining operation was unsuccessful in relieving his symptoms. When the patient recovered consciousness he noticed that the right supraclavicular region was much bruised and swollen. When he came under my care in January, 1906, he had complete flaccid paralysis of the right arm, including the pectorales, but not the serratus magnus nor the trapezius. There was complete anæsthesia of the limb except over the area supplied by the intercosto-humeral nerve. Faradic excitability was entirely lost.

An operation was performed by me on Feb. 12th, and the whole length of the brachial plexus from the spine to the lower part of the anterior axillary fold was exposed. The supraclavicular portion of the plexus was found to be involved in a dense mass of fibrous tissue. All this was dissected away and the cords entirely freed. In the uppermost part of the fifth nerve cord a fibro-neuroma was found. This was removed, and the distal part of the fifth nerve cord was grafted into the sixth. The condition of the other cords appeared to be healthy, and it was thought that the paralysis below might be due to compression by scar tissue. No signs of improvement followed until March 12th, 1908, when return of power in the biceps was noted, so that he could flex the forearm to the right angle. There was also some recovery in the deltoid, and it responded to faradic stimulation. On March 12th, 1909, the biceps and brachialis anticus had completely recovered, so that he had full power of flexion of the forearm; and the deltoid acted, so that he could draw his arm away from the side for about four inches. The biceps, though smaller than the one on the opposite side, was of considerable size and became firm and solid when in motion, and the fibres of the deltoid could be felt to harden when attempts were made to abduct the arm. With regard to sensation, it was found to be present all over the skin of the upper arm down to the elbow; although it was poorly marked on the lower half of the outer side, sensation was present in the following areas: (*a*) the cutaneous branches of the circumflex nerve derived from the fifth and sixth cervical nerves; (*b*) the upper external cutaneous branch of the musculo-spiral, derived from the sixth and seventh cervical roots; (*c*) the internal branch of the musculo-spiral, derived from the fifth root; (*d*) the lesser internal cutaneous nerve, derived from the sixth (?) cervical root; and (*e*), as we have before mentioned, over the intercosto-humeral nerve, derived from the second dorsal root. So that the recovery of motor power is limited to the biceps, brachialis anticus, and partially to the deltoid, but the supinator longus does not respond, nor do the muscles below the elbow. Sensation is gradually advancing down the arm.

II.—NERVE ANASTOMOSIS FOR INFANTILE PARALYSIS.

CASE 3. *Partial loss of power in arm due to infantile paralysis.*—A boy, aged nine years, came under my observation on Nov. 21st, 1906, with the history of an attack of infantile paralysis in September, 1906, which resulted in partial loss of power in the left arm. He was seen by me on Nov. 21st, 1906. The left arm hung by the side, but the elbow and wrist could be flexed. The deltoid, supra- and infra-spinatus, and biceps and supinator longus were wasted and did not respond to faradic stimulation. He could flex and extend the elbow, however, with the remaining muscle attached to the internal and external condyles. He was treated by massage and the constant and faradic currents, but no improvement followed.

On May 22nd, 1907, the condition of paralysis remained *in statu quo ante*, and it was decided to graft the anterior branch of the fifth cervical nerve into the sixth. This was done on May 27th. The fifth cord was divided, and both its proximal and distal ends inserted into the sixth about half an inch apart. Massage and the faradic and constant currents were used daily. No improvement was noted for one year. On May 20th, 1908, it was noted that contraction had appeared in the biceps, and that the muscle was fuller and firmer; also that the posterior part of the deltoid was active and that the fibres were developing. On May 14th, 1909, the improvement in the biceps was seen to be steadily continuous though slow, and the deltoid was firmer and more active.

[illegible] *deltoid muscle.*—A boy, [illegible] into Westminster [illegible] deltoid. At the age of ten years he had an illness, and then it was found he [illegible] Massage and electricity had [illegible] hree years before he came [illegible] y result. The deltoid was [illegible] to respond to any faradic stimulation.

The brachial plexus was exposed, and, assisted by Mr. E. Rock Carling, I determined by means of sterilisable electrodes which portion of the fifth nerve cord was paralysed. It was found that a weak stimulus, applied to the internal portion of the cord, caused contraction of the biceps, supinator longus, and extensor carpi radialis longior, but when the current was applied to the outer portion of the cord no effect was observable. It was therefore concluded that the fibres supplying the deltoid lay in the upper and outer portion of the cord. It was therefore divided half-way through its thickness and then longitudinally downwards for an inch, so that the nerve fibres of the deltoid could be brought over to the sixth nerve. In the sheath of the latt [illegible] and the free end of the [illegible] inserted and sutured. [illegible] deltoid responded to faradic stimulation. The muscles had increased in size, had become firm, and could be felt to harden when voluntary movement was attempted. 18 months after the operation the boy could abduct the limb six inches from the side, and two years after the operation about eight inches. Since then the boy has been lost sight of, but from the experience of previous cases we have reason to believe that the recovery will be continuous.

III.—OPERATIONS ON THE POPLITEAL NERVES FOR VARIOUS FORMS OF PARALYTIC TALIPES.

From their anatomical arrangements the external and internal popliteal nerves afford peculiar facilities for nerve grafting, and Kilvington's experiments on dogs, when operating on the popliteal space, have been remarkably successful. I now give details of four cases of this nature.

CASE 5. *Paralytic talipes calcaneus due to anterior poliomyelitis; nerve anastomosis; partial recovery.*—A boy, aged nine years, was admitted to Westminster Hospital on May 19th, 1905, under my care. He had an attack of anterior poliomyelitis when aged two and a half years. He had been treated by massage and electricity for three years previously to my seeing him. Examination showed total paralysis of the gastrocnemius and soleus.

On June 5th the internal and external popliteal nerves were exposed. The branches of the gastrocnemius and soleus from the internal popliteal nerve were identified; and were separated from this nerve trunk and grafted on to the external. On Oct. 1st it was noted that voluntary extension of the ankle had commenced, and the tendo Achillis could be felt to become tense during this movement. The power of plantar flexion of the foot steadily increased until he was able to bend the toes fully. When he walked he could raise the heel from the ground. At this date (May, 1909) the gastrocnemius and soleus on the left side have not recovered power sufficiently to enable him to raise the whole weight of the body by their effort.

CASE 6. A boy, aged nine years, was admitted into Westminster Hospital on Oct. 21st, 1905, suffering from talipes calcaneus due to anterior poliomyelitis. He had been treated by massage and electricity for the previous three months with no improvement whatsoever, and the foot was in a position of marked talipes calcaneus, with great contraction of the plantar fascia. The electrical reactions showed that all the muscles of the left leg below the knee reacted to faradism except the gastrocnemius and soleus.

On Nov. 13th an operation precisely similar to that performed in the preceding case was carried out. On Dec. 5th it was noted that there was some tension in the tendo Achillis when voluntary movement was attempted, and on Jan. 9th, 1906, he could raise the heel, and the tendo Achillis could be felt to harden when resistance was opposed to the foot. On Jan. 31st the voluntary movement of the heel upward was more marked. On May 9th it was noticed that he could flex and extend the left ankle well when the foot was off the ground. On March 13th, 1907, it was found that the gastrocnemius and soleus reacted to the faradic current, whilst with the galvanic current K.C.C.>A.C.C. When the foot was plantar-flexed it required a considerable effort on the part of the observer to overcome the contraction of the gastrocnemius and soleus, and the tension of the tendo Achillis was very considerable. The range of ankle movement had become almost normal, but he was not able to raise the whole weight of the body on the affected foot, but the heel was well raised in walking. In this case the improvement has been continuous both as to the strength of the muscles and the mode of walking, but there is still room for further recovery of the muscles.

The two following cases are illustrations of nerve anastomosis carried out for paralytic varus.

CASE 7. *Talipes varus due to anterior poliomyelitis; nerve anastomosis.*—A boy, aged seven years, was admitted on Sept. 17th, 1905, with talipes varus dating from the age of two years, affecting the left leg. The leg was wasted and there was loss of power below the knee, particularly marked in the peroneal muscles, which gave the reaction of degeneration.

On July 3rd, 1906, after prolonged treatment by massage and electricity, an operation was performed. The external and internal popliteal nerves were dissected out. The external nerve was then divided completely across, and both the distal and proximal ends inserted into the internal popliteal nerve at a distance of about one inch from each other. In this case no improvement has followed, this being doubtless due to the fact that considerable degeneration had
already taken place in the internal popliteal nerve trun
and a fuller recognition of this fact would have prevent
any attempt at nerve grafting.

CASE 8. *Paralytic talipes equino-varus of poliomyeli*
origin, dating from the age of 18 months.—It was found
testing the muscles that the anterior tibial and the peror
muscles were completely paralysed and showed the reacti
of degeneration.

By way of treatment preliminary to nerve anastomosis t
plantar fascia and tendo Achillis were divided. On July 31
1905, a nerve anastomosis operation was undertaken in t
popliteal space. The internal and external popliteal trun
were exposed, the external one divided completely acro
and its distal end inserted into the internal. No improv
ment was noted for two years, and then a second operati
was undertaken in May, 1908, for the purpose of ascertaini
the condition of the anastomosed nerve. It was then fou
that the distal portion of the external popliteal nerve bel
the site of anastomosis was undergoing regeneration,
evidenced by an increase in size as compared with t
proximal part, and by its whiteness, roundness, and firmne
and it was further found that faradic stimulation of t
distal portion caused contraction of the anterior and exter
group of muscles. In this instance the progress of regene
tion is extremely slow, but the outlook is hopeful.

We may learn from a consideration of these cases that t
time when regeneration occurs is extremely variable. In t
facio-hypoglossal anastomosis signs were evident one we
after the operation, but in this case paralysis had o
existed for six months. My conclusion is that the long
paralysis has existed before the operation the slower will
the signs of recovery in appearing. We must not theref
regard a case as hopeless, even if no evidence of regene
tion is present three years after the operation. The appe
ances detailed in the last case we have quoted were rema
ably encouraging.

To sum up these cases, we must remark that they are
widely different causation. Of the eight cases quoted, t
were of traumatic origin and one recovered after comple
severance of the nerve, and one is showing steady progre
towards recovery. Of the cases due to anterior poli
myelitis, six in number, in four there is distinct evidence
a more than partial recovery of the muscles, but in one
these cases improvement has ceased for a year. In t
others no clinical signs of regeneration are apparent, ev
after four years. In one of the latter operative explorati
showed, however, that the external popliteal nerve was bei
regenerated centrifugally.

Harley-street, W.

A POSSIBLE NATURAL ENEMY TO TH MOSQUITO.

BY J. MITFORD ATKINSON, M.B. LOND.,
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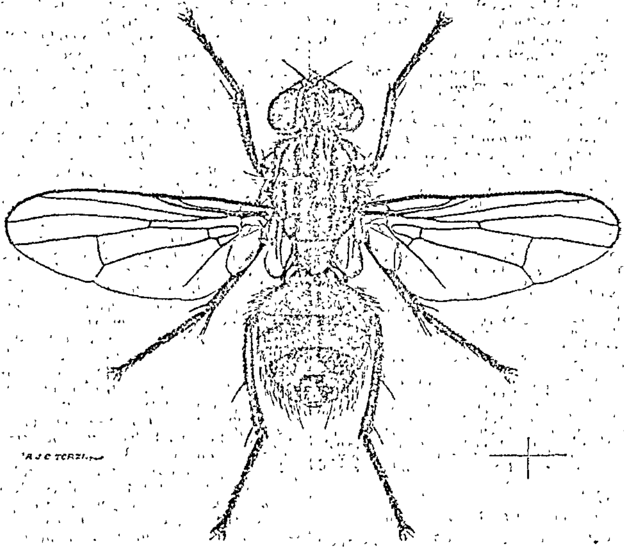
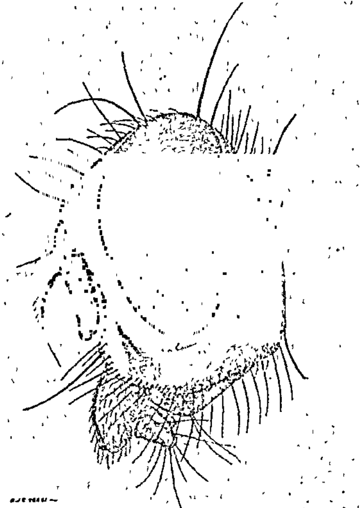
IN the summer of 1908 it was reported to me by M
Gibson, the colonial veterinary surgeon of Hong-Kong, th
he and Inspector Watson had seen flies eating mosqui
larvæ in the nullah and streams adjacent to the cattle dep
at Kennedy Town in that colony. I had some of the
collected and sent to the Tropical School of Medicin
London, where they were recognised by Colonel Alcoc
the entomologist, as belonging to the Dolichopodides, man
of the species of which family have well-known aquat
propensities; they were, however, too much damaged o
arrival to be specifically identified. As Colonel Alcock ask
for more specimens I went to collect some, but th
rains had washed all the larvæ away, and, the cool weathe
soon after setting in, it was impossible to obtain any tha
season. This summer, towards the end of April,
went to Kennedy Town with Mr. Gibson and we sa
hundreds of flies eating larvæ in the nullah and als
in the streams near by. On stirring up the stagnan
water at the sides of the nullah crowds of larvæ were dis
turbed; the flies pounced down upon them and rapidl
devoured larvæ almost as long as their own bodies. At time
they would fly away with the larvæ in their mouths. Thes
were evidently all of the same species. Some were collecte
and sent home and have been identified by Mr. E. E. Austen
the Dipterologist at the British Museum (Natural History), a

FIG. 1.



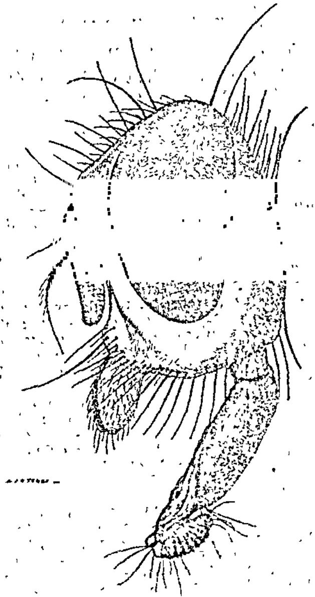
Lispa Sinensis (Schiner).

FIG. 2.



The head in profile, showing proboscis within the mouth cavity.

FIG. 3.



The head in profile, showing proboscis extended.

belonging to the species *Lispa Sinensis*, *Schiner*, of the family of *Anthomyidæ*, or flower flies. Since my return to England I have seen Mr. Austen and he says this discovery is a most interesting one, and, so far as he knows, entirely new. On his advice I have had drawings of the fly made by Mr. A. J. Engel Terzi, since accuracy is of the first importance.

In examining the two specimens which I sent, and which are now at the British Museum, Mr. Terzi found the mouth parts very peculiar both in size and shape. All the species of this genus have the same characteristics The proboscis is very short and chitinous, and the palpi are of a peculiar shape; they are very much like spoons. The illustrations show (Fig. 1) the whole insect; (Fig. 2) the head in profile, with the proboscis within the mouth cavity; and (Fig. 3) the head in profile, with the proboscis fully extended. I give herewith a brief description of the fly kindly sent me by Mr. Austen:—

Lispa Sinensis, Schiner.—Female—Length (two specimens) 6 5 to 7 millimetres; width of head, 2 millimetres; width of front at vertex, 1 millimetre; length of wing, 6 millimetres. *Olivaceous-grey bristles and hair black; dorsum of abdomen somewhat lighter than that of thorax; second and two following segments of abdomen each with a pair of curved, dark olive marks on dorsum, the marks on second and third segments twice the breadth of those on fourth segment.*

Head: face and sides of front golden yellow; frontal stripe broad, *dusky clove-brown; palpi greyish ochraceous buff, broadly spatulate at* tips; antennæ greyish-black.

Thorax: dorsum with three longitudinal clove-brown stripes, the median stripe entire, the admedian stripes not quite reaching the præsutural furrow; a similar but less conspicuous stripe on each side above humeral callus, not extending far beyond transverse suture.

Abdomen: dark marks on dorsum of second and following segments start from front margin in each case close to middle line, and curve outwards towards posterior angles, which, however, they do not reach; the marks on fourth segment are shorter than those on the two preceding segments.

Wings: slightly infuscated.

Halteres: ochraceous-buff.

Legs black; femora grey.—E. E. AUSTEN (July 26th, 1909).

Further investigation is required in order to ascertain whether there are two predaceous flies in Hong-Kong and also the exact larvæ on which these flies are predaceous. As I left for England on May 4th it was impossible to determine the exact larvæ on which the Lispa Sinensis were then feeding, but Mr. Gibson is positive that he has seen them preying on mosquito larvæ.

A CASE OF "DELAYED CHLOROFORM POISONING" TREATED WITH DEXTROSE; RECOVERY.

By A. A. WEIR, M.B., B S.

THE patient, a boy, aged nine years, was seen by me on Dec. 16th, 1908, complaining of "pains in the stomach." Three days previously he had eaten a considerable quantity of uncooked broad beans. The pains had come on on the following day and there was a good deal of vomiting. The temperature was 100° F.; there was some general abdominal tenderness, but nothing to indicate definitely appendical trouble. The vomiting persisted and all that could be retained was a little milk. On Dec. 19th everything pointed to the appendix as the source of trouble, and on the 20th I concluded that pus was present. Dr. P. H. Lang, of Camperdown, saw the case with me on this day and agreed with the diagnosis. With Dr. Lang's assistance I opened the abdomen and drained an abscess which extended down into the pelvis. The anæsthetic administered was chloroform, which was taken exceedingly well, the time occupied being about three-quarters of an hour. After the operation the patient was restless and complained a good deal of thirst, but he vomited once only and that was 12 hours afterwards. Saline solution was administered per rectum on account of the thirst. For 48 hours the patient seemed well, except for the restlessness; the temperature was normal and the pulse quite good. The condition as far as the operation was concerned seemed so good that one felt inclined to attribute the restlessness to the boy's disposition. On the following day, however, the restlessness had become a maniacal delirium, the patient screamed, threw the clothes about, tore off his dressings, and had to be placed under mechanical restraint. By this time I had decided that the case was one either of "acute post-operative mania," or "delayed chloroform poisoning." The almost entire absence of vomiting seemed in striking contrast to all reported cases of delayed chloroform poisoning, but I was inclined to favour the latter diagnosis and administered sodium bicarbonate by rectal injection. Dr. Lang again saw the case with me on the third day after operation, when the patient was alternately delirious and comatose. The urine showed diacetic acid when tested with liquor ferri perchlor., and although the quantity of urine was not measured it was judged by the nurse to be about normal; there was no albumin. Dr. Lang and I decided to continue the rectal injections and sodium bicarbonate; and acting on a suggestion made by Dr. A. P. Beddard in THE LANCET of March 14th, 1908, p. 782, a solution of glucose, half an ounce to half a pint of milk, was administered by the nasal tube and a 10 per cent. solution by the rectum. This was given four hourly, in addition to a good supply of carbohydrate food. For the next 20 hours the case went from bad to worse, the face became a rich plum colour, the coma deepened, frothy saliva oozed from the mouth, and the prognosis seemed absolutely hopeless. Typical Cheyne-Stokes respiration was present, and the sweating was profuse. The pulse, however, remained good, and was never above 108 per minute, and the patient retained everything given by the nasal tube and per rectum. After remaining in this desperate-looking condition for a few hours he began to show a little improvement, the first sign being an attempt to move his head. Within six hours from this first sign of improvement the change was nothing short of marvellous, and the prognosis from seeming absolutely bad seemed absolutely good. Within six hours, in fact, the boy's intellect was quite clear and he expressed a wish for some food. Recovery was perfect.

The case is interesting from several points of view. The diagnosis seems fairly well established, but if it were correct the absence of vomiting is not easily accounted for considering that in practically all cases reported vomiting is by far the most constant and prominent symptom. The treatment unfortunately leaves some doubt as to whether the sodium bicarbonate or the glucose and carbohydrate was the chief element making for success in the case. The rapid improvement within 24 hours of the first administration of glucose solution, in conjunction with the fact that sodium bicarbonate had been given over 24 hours previously, would perhaps indicate that the glucose was the principal factor contributing to the favourable result. The comparatively gradual onset of the symptoms also seems uncommon in these cases, for although the boy was always more or less restless after the operation it was well into the third day before the case looked alarming in any way. It is unfortunate that the urine was not examined earlier for diacetic acid; the reaction for this compound rapidly disappeared as the case improved.

It should be added that the patient previously to operation was quite healthy. He had had chloroform four years before for the removal of adenoids without any untoward result. One sister in a family of nine had died from tuberculous meningitis; otherwise the family history was good.

Terang, Victoria, Australia.

THE VACUOLATION OF THE BLOOD PLATELETS: AN EXPERIMENTAL PROOF OF THEIR CELLULAR NATURE.[1]

By HUGH C. ROSS, L.R.C.P. LOND., M.R.C.S. ENG.,
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ON July 27th, 1907, a paper appeared in THE LANCET by Ronald Ross, J. E. S. Moore, and C. E. Walker entitled "A New Microscopical Diagnostic Method and Some Simple Methods for Staining Liquid Blood." It described new methods for the staining of blood cells *in vitro*—notably the agar jelly method—by mixing polychrome methylene blue with agar and preparing a film; blood cells spread upon this will absorb the stain, and if the jelly is suitably prepared the different morphological elements of the cells can be readily distinguished. It also described how the leucocytes, after they had been resting on the jelly for a short time, developed bright red spots in their cytoplasm, and it was suggested that the spots might be centrosomes. The spots appear as bright scarlet points, and resemble closely what one would imagine that centrosomes would look like if they [illegible] leucocytes The "red [illegible] in the blood platelets, [illegible] s the authors suggested in their paper in THE LANCET that if they could be demonstrated in the blood platelets it would settle the nature of these bodies and close an old-existing controversy.

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[1] A paper read recently before the Royal Society.

About two months ago I was fortunate enough to observe these "red spots" in the blood platelets, and if the following experiment is repeated the spots can be produced in them in every specimen. Prepare a neutral solution which contains 3 per cent. sodium citrate, 1 per cent. sodium chloride, and 1 per cent. morphine hydrochloride. Draw up into a capillary tube a volume of this solution, and add to it an equal volume of blood drawn freshly from the finger. After allowing the two fluids to mix incubate the tube at 37° C. for five hours. A film of agar jelly must now be prepared which contains a sufficiency of Unna's stain to stain deeply the granules of polymorphonuclear leucocytes when they are spread upon it. One suitable formula for preparing this jelly is given in THE LANCET of Jan. 16th and Feb. 6th, 1909, and another suitable formula will be found in the first equation in a paper recently published in the Proceedings of the Royal Society, B, Vol. LXXXI., 1909, p 102. Place a drop of the incubated blood and morphine solution on to a cover-glass, which should be inverted and allowed to fall flat on to the agar film In about 15 minutes' time it will be seen that probably all the blood platelets will show one or more bright red spots in them, and these spots are identical in appearance (except that they are usually smaller) with those seen in the cytoplasm of leucocytes when blood is examined by this *in vitro* method by which the spots in the larger cells were observed by R. Ross, Moore, and Walker. It is, however, necessary to state that the spots are not centrosomes. At first I believed them to be such, but further investigation showed the suggestion to be erroneous. They are diffusion vacuoles. If the diffusion of stain into leucocytes is accelerated by heat or alkali so as to cause maximum staining without actually killing the cells, then stained liquid also passes into the colloid cytoplasm and remains suspended in it as a "red spot." A description of the nature of these spots was published in the *Journal of Physiology*, September, 1908. These vacuoles get gradually larger, and when the leucocytes die the spots suddenly disperse owing to the liquefaction of the cytoplasm. The suggestion of R. Ross, Moore, and Walker that if the spots could be seen in the blood platelets it would be proof of their cellular nature, was evidently based on the assumption that the spots were centrosomes. Since they are not centrosomes, it may be said that their appearance in the blood platelets now falls into insignificance. But the spots in the platelets also get larger and then disperse after an interval, and their disappearance is practically coincident with the disappearance of the vacuoles in the leucocytes, which is caused by the liquefaction of the cytoplasm occurring at death. Morphia also causes extreme vacuolation of the leucocytes. As a matter of fact, studying the question from another aspect also shows that their vacuolation is proof that the blood platelets are cells. When fresh blood is placed on the jelly and no morphia is employed the leucocytes do not become extremely vacuolated, nor do the platelets develop the spots. Why should morphia have this effect?

It was shown in a former paper[2] that different cells have different coefficients of diffusion, and that in blood cells approaching death causes a lowered coefficient. It is obvious that the vacuoles will appear more readily—that is, liquid will diffuse more readily into cells which have a lowered coefficient of diffusion. It is apparent, therefore, that the blood platelets must be cells, or rather must be composed of living protoplasm, for their vacuolation is produced experimentally by the action of the poison, as morphia, in causing the gradual approach of death, also lowers the coefficient of diffusion. Morphia lowers the coefficient more than any substance that has been tried as yet, and it appears to have a greater effect on the cytoplasm than other poisons. As all the platelets in a specimen usually become vacuolated, I believe that they all belong to one class of cell, derived from one source. In view of the vacuolation, the precipitate theory of the blood [illegible] theory, that they are [illegible] also, I think, be dis[illegible] that the nucleus of a cell is its "higher centre." It is difficult to believe that a cell can thrust out its nucleus. Moreover, in the paper in the *Journal of Physiology*, already referred to, it was stated [illegible] re never seen to be connected [illegible] ets, therefore, can hardly be [illegible] I believe, the outcome of the examination of dead structures. Blood platelets are never seen emerging from red cells when *in vitro* methods are employed. [illegible] platelets are fragments [illegible] which have the same staining rate as those of the leucocytes. When blood is placed on jelly which excites amœboid movement in leucocytes[3] the platelets have been seen to extrude and retract pseudopodia. On a few occasions a pseudopodium has been seen to become separated, and the fragment appears to be identical with the other platelets seen in the specimen. It may contain clear cytoplasm, a few granules, or even a lobe of the nucleus.

Liverpool.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE OF A CASE OF HYDROA GESTATIONIS.

By NINIAN M. FALKINER, M.D. DUB.

DR. E. Ward's interesting account of a case of hydroa gestationis published in THE LANCET of June 26th, p. 1827, reminds me that about 15 years ago I showed a case of this condition at a meeting of the Royal Academy of Medicine in Ireland. I did not make any permanent record of the particulars, but by good fortune I met the patient in a street in Dublin on July 17th of the present year and obtained from her the following details of her symptoms. She has been twice married. By the first husband she had three children—one boy and two girls—and during these pregnancies she had no eruption. By the second husband she had five children—four boys and one girl; she had the eruption each of the four times that she was pregnant with a boy but not during the second of the five pregnancies, the child being on that occasion the girl. On receiving this information I remembered having already heard from her that the eruption only occurred when she was bearing male children. She tells me that she has of late been under treatment for disease of the kidneys. She was always a pale, delicate-looking woman and in poor circumstances.

Dublin.

A CASE OF SYPHILIS WITH AN UNUSUALLY LONG INCUBATION PERIOD.

By G. PROSSER JAMES, L.R.C.P. LOND.,
M.R.C.S.ENG., D.P.H.

THE importance of an accurate knowledge of the incubation period in infectious diseases prompts me to record a case with an unusually long period.

A man consulted me on August 4th, 1908, with symptoms of commencing orchitis. He had exposed himself to contagion on July 5th, and seven days afterwards symptoms of gonorrhœa appeared, for which he treated himself (the treatment consisting, among other things, of a sulphate of zinc injection) for the seven days preceding the attack of orchitis. This attack of orchitis turned out to be a severe one and lasted nearly three weeks, after which I sent him away for a holiday. He returned on Sept. 12th with the history that on the 10th—i.e., 67 days after coitus—a small papule appeared near the frenum and had become perceptibly larger. I told him I was afraid it was a hard chancre, but did not put him on mercury immediately as the time since exposure seemed so unusually long. However, as time went on the papule became a typically indurated button, and on Sept. 29th (86 days after contact) a roseolar rash appeared, followed a day or two later by small tonsillar ulcers. The diagnosis being now beyond question I placed him on hydrargyrum cum creta (2 grains) every four hours. The rash speedily disappeared and the case is now running the usual course.

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[2] Proceedings of the Royal Society, B, vol. lxxxi., 1909.

[3] THE LANCET, Jan. 16th, 1909, p 154.

Referring to the only authorities I have, I find that Hutchinson[1] gives five weeks as the common average and 55 days as the longest time he knows, and in this case the chancres were indurated on discovery, and so had probably been present for some days. D'Arcy Power[2] gives 25 days as the average, but tells his patients not to consider themselves safe until after the expiration of 40 days from date of exposure.

The patient's account may be taken as trustworthy.

Penarth.

A CASE OF FOREIGN BODY IN THE NOSE FOR 44 YEARS.

By D. Lindley Sewell, M.B., B.S. Lond., M.R.C.S. Eng., &c.,

HONORARY ASSISTANT SURGEON TO THE MANCHESTER EAR HOSPITAL.

A woman, aged 47 years, consulted me about a fœtid discharge from the left nasal passage. It was of some four months' duration, usually clear, but stained with blood at times. On examination a black mass was seen surrounded by sero-purulent secretion on the floor of the nose at the junction of the nose and naso-pharynx; to the probe it was found to be of stony hardness. It was broken into two pieces and removed with polypus forceps. On breaking the rhinolith up a small incomplete metal ring was found embedded in its midst. The patient then told me that when she was three years old a shoe-button had been lost in her nose and had not been recovered at the time, and so she was thought to have swallowed it. It is evident, however, that the button had formed the nucleus for the rhinolith and had remained in the nose for 44 years without giving rise to any symptoms.

Manchester.

Reviews and Notices of Books.

Symptoms and their Interpretation. By James Mackenzie, M.D. Edin., M.R.C.P. Lond., Physician to the West End Hospital for Nervous Diseases, London, &c. London: Shaw and Sons. 1909. Pp. 297.

In the introduction to this book the author points out that diseases in their earliest stages come before the general practitioner rather than the specialist, and that it is most desirable for the former to record his observations. Good work "can be accomplished by simple practical methods" without any of the "recondite methods used in well-equipped hospital wards or laboratories." If the book before us is to be considered an example of such work, we cordially echo the author's invitation to the general practitioner, for we find here an account of careful observations, well worthy of record, and leading to suggestive inductions which may benefit others confronted with the same clinical problems. Dr. Mackenzie divides symptoms into reflex phenomena, disturbances of function, and signs of structural defect. The last two are but lightly touched upon, the main subject of his work being a study of pain arising from disease of the different viscera. He accepts Lennander's views as to the insensibility of the stomach and intestines to painful stimuli, such as cutting or burning, and infers that the pain arising from visceral disturbance is due to overflow of the stimulus, carried by the afferent nerves, into the spinal nerves or their origins in the cord. Visceral pain is thus always "referred." On this view the pain in connexion with each viscus must always be referred to the same spot on the surface of the body, though it may radiate over a narrower or wider area. It should also be mainly referred to the skin as the seat of most sensation. But, as a matter of fact, it is usually possible to distinguish between a deep and a superficial pain. Further, taking for example the colon, it is not uncommon for the pain of colic to travel gradually along the course of the large bowel, from the right iliac fossa to the epigastrium and thence down to the left iliac region and hypogastrium, as the peristaltic wave descends. If the pain were solely "referred," this should not be the case. It would rather seem that pain may be felt "in the colon" just as it is in the finger, but the stimulus needed to produce it is of a special kind—viz., spasm or stretching of the muscular wall. It is probably only by experience that we learn to "refer" the pain of a stimulus arising in the finger to its seat of origin; the pain is, objectively, a molecular disturbance in certain cells of the brain. In the case of the internal viscera, which we cannot touch and see, the reference of the pain to its origin is naturally less accurate. Dr. Mackenzie gives interesting cases illustrating the pain of angina pectoris, which he seeks to rob of some of its terrors. Other examples of valuable observations are on the special pain associated with renal colic and with gall-stones.

The book may be cordially commended to the perusal of all who are engaged in the study of disease and who appreciate the assistance afforded by exact observation in furthering our powers of diagnosis.

Foods: their Composition and Analysis. By Alexander Wynter Blyth, M.R.C.S. Eng., F.I.C., F.C.S., and Meredith Wynter Blyth, B.A. Cantab., B.Sc. Lond., F.I.C., F.C.S. Sixth edition, thoroughly revised, enlarged, and rewritten. London: Charles Griffin and Co., Limited. 1909. Pp. 619. Price 21*s.*

New editions of this well-known standard work come with a regularity which shows that it maintains a steady popularity. The writers are both experienced analysts and they hold appointments under the Sale of Food and Drugs Acts which make their acquaintance with the administration of these Acts of a really practical kind. The senior author, Mr. Alexander Wynter Blyth, is also a barrister-at-law, so that together they know exactly the kind of difficulties which public analysts daily encounter in regard to procedure in the courts and to analytical methods. The work, however, is not confined to a presentation of merely those analytical methods which directly concern the public analyst engaged upon the examination of foods for the purposes of the Acts. The detection of adulteration is its direct aim, but chapters have been added on the chemical and bacteriological analyses of potable water. This section, coupled with that on the analysis of potable spirits, perhaps gives greater proof than any other section of the book of the revision and enlargement which have produced the present edition.

The very valuable work of Dr. A. C. Houston, which is published regularly in the reports on the metropolitan water-supply, finds acknowledgment in all modern literature upon the subject, especially that part of it dealing with the practical bacteriological study of drinking waters. The authors accordingly refer to the trenchant observations which Dr. Houston has made in regard to such questions as the isolation of bacillus coli communis, the persistence of sewage organisms in deep soil, the micro-enemies of pathogenic organisms, and so forth. In regard to the chemical analysis of drinking waters very few changes appear to have been adopted in the application of analytical methods, but mention may be made of the mportance properly attached by the authors to the estimaion of the dissolved oxygen in water, since the quantity of hat gas in water is diminished by the activity of microorganisms. Hence attention is directed to the more recent methods for determining dissolved oxygen accurately, methods which can only be usefully applied to examinaions made on the spot. Winkler's modification of the now classic method of Wanklyn, which is known as the albuminoid ammonia process, is mentioned, persulphate of potassium being employed to oxidise protein substances into ammonia. The fact that by this method urea, uric, and hippuric acid yield much more ammonia than when alkaline permanganate is used strengthens the hands of the analyst and increases his power of discrimination as to the nature of he nitrogenous substance present.

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[1] Syphilis, 1893.

[2] Encyclopædia Medica: Article on Syphilis.

The question of the relative value of the chemical and bacteriological examination of potable waters receives little attention, the authors being content with merely observing hat "it is now generally admitted that no hard-and-fast tandards can be fixed for drinking waters either from a hemical or bacterial standpoint." "Every water," they dd, "should be judged with a full knowledge as to the urroundings of the supply and the geological formation rom which it is drawn." The section on the analysis of potable spirits has been expanded on account, no doubt, of he publicity recently given to the subject by police proceedings and a Royal Commission. The methods described are, for the most part, taken from the contributions of French and German authors. The paragraph on p. 397 on he ester iodine method shows careless editing, for "nitrate" hould be written "nitrite" and the reagent "sodium hydrogen" is new to us.

The book is one which medical officers of health, analysts, and others will still do well, as they have done in the past, o keep by them as a trustworthy guide and as a work of reference on matters pertaining directly to the analysis of foods.

Medizinal-Berichte uber die Deutschen Schutzgebiete fur das Jahr 1906-7. (Medical Reports on the German Protectorates for the year 1906-7.) Published for the Imperial Colonial Office by Ernst Siegfried Mittler and Son, Berlin. 1908. Pp. 324. Price M. 7½.

IN this volume are comprised a number of interesting reports on the health and sanitary condition of the Protectorates of German East Africa, the Cameroons, Togo, German South-West Africa, German New Guinea, the Caroline and Marshall Islands, and Samoa, for the official year beginning April 1st, 1906, and ending March 31st, 1907. Under separate headings are given the incidence of disease on Europeans and natives in each colony, the details being summed up in convenient tables, as also the cases treated in the hospitals or in the "policlinics" Some attention is given to certain diseases, more especially those which commonly occur in the tropics. In German East Africa, which has a total population of 4,785,204, of whom only 2142 are Europeans, there were medically treated during the official year 24,063 patients; 2250 of them suffered from malarial fever and 15 died, while 71 had blackwater fever, of whom 11 died. Of the 2250 malarial fever cases 706 were Europeans, of whom five died, and of the 71 blackwater fever patients 41 were Europeans, seven of whom succumbed to the disease. The measures employed in German East Africa against malaria included prophylaxis by quinine, destruction of mosquito larvæ, and the treatment of the surface of pools, puddles, and collections of stagnant water by petroleum. Sleeping sickness was introduced into German East Africa from the Congo State in 1901 but has never become widely prevalent, its manifestations being confined to certain definite localities which coincide with the distribution of the glossina palpalis. As a precautionary measure and with a view to seek out unrecognised cases the medical staff examined 11,511 persons in whom enlarged cervical glands were present, and of these 88 were found to be suffering from trypanosomiasis. There were no epidemics of small-pox in German East Africa during the year under consideration, only a few scattered cases being reported. Vaccination is compulsory; but no compulsion is required since the natives willingly avail themselves of this protection against small-pox. Calf lymph is used, and during the 12 months 33,540 vaccinations were performed, including 1265 revaccinations. The medical staff of the East African Protectorate includes 35 officers and 55 subordinates. Among other duties falling to the medical staff stationed at Tanga is the weekly inspection of prostitutes. Any woman found suffering from venereal disease is removed to hospital and detained there until her cure is complete. In the colony of Togo venereal diseases are stated to be extremely rife, both among the Europeans and the natives. For example, in one town where there are 132 resident Europeans no fewer than 124 of them have been under treatment for venereal disease. Gonorrhœa is especially prevalent among the semi-civilised coloured population and in the town already referred to we are told that it would be extremely difficult to find a black shop assistant who was not suffering from acute or chronic gonorrhœa. Such an individual, wittily remarks Dr. Kruger, the government surgeon, would be "ein weisser Rabe"—i.e., a *rara avis*.

In German South-West Africa, where during part of the year military operations were being carried out with a force of 15,000 troops against the Hereros and others, a large medical staff was employed, including 120 military surgeons and five other medical officers, 470 male subordinates, 43 Red Cross nurses, and 11 Sisters of Mercy. At the end of the year, the military operations having been concluded, the troops were reduced to 7000, with corresponding reduction of the medical staff. Malarial fever, dysentery, and enteric fever were very prevalent during the year, 57 Europeans dying from the latter disease alone. There was a good deal of sickness and privation among the native prisoners of war; for example, out of 2000 unfortunate blacks imprisoned by the Germans on the island of Haifisch no fewer than 1200 died, 70 per cent. of these deaths, it is stated, being caused by scurvy. Included in the volume are two special reports on the health of the troops in German East Africa and in the Cameroons. Appended also is a list of the titles of 67 works on tropical medicine and veterinary hygiene written by members of the staff in the various German protectorates, and published with the permission of the Imperial Colonial Office. For those acquainted with the German language there is a large amount of valuable and interesting information to be found in this annual volume of the *Medizinal-Berichte* for 1906–07.

The Edinburgh Stereoscopic Atlas of Obstetrics. Edited by G. F. BARBOUR SIMPSON, M.D. Edin., F.R.C.P. Edin., F.R.C.S. Edin., and EDWARD BURNET, M.B., Ch.B. Edin. In Four Sections, each containing 25 subjects with descriptive text. Sections 3 and 4. London: The Caxton Publishing Company. 1908 and 1909. Price 4 guineas *complete.*

THIS work has now been completed by the appearance of the third and fourth sections. The third section illustrates the anatomy of the fœtal skull, the mechanism of the second and of the third stage of normal labour, the post-partum uterus, and the application of axis-traction forceps. The photographs are, of course, actual reproductions after nature We understand many of the difficulties that have to be contended with and are not wholly surprised to find that a good many of the illustrations do not show very much. The statement that the passage of the placenta into the vagina may be detected by the hardening and diminution in size of the uterus is certainly not accurate. When we consider how large a part has been played by the Edinburgh School in the elucidation of the correct mechanism of labour it is surprising to find that the two separate and distinct movements of restitution and external rotation are confused. They are certainly not the same thing and should be separately described. The series of illustrations of the application of the forceps is a good one, and we are glad to see that axis-traction forceps alone are figured.

The fourth section deals with breech and face presentations, Cæsarean section, ante-partum hæmorrhage, extra-uterine gestation, hydatidiform mole, hydrocephalus, and inversion of the uterus. The representation of the varieties of transverse presentations does not appear to be very satisfactory. In a work intended for the guidance of the student we wish that the operators who are taking part in the performance of Cæsarean section might have had their arms covered up, and a little more orderly arrangement of the surrounding towels and other paraphernalia would have made a better impression, and certainly a better photograph. It is a pity that the uterus with a hydatid (*sic*) mole *in situ* is not very well arranged for reproduction, as the specimen is one of much interest. If due allowance is made for their necessary limitations these photographs should prove of considerable advantage to the student in enabling him to refresh his memory and to recall to his mind what he has actually seen at the bedside. We are sure they will thus prove useful to a large number of students and practitioners.

LIBRARY TABLE.

Practical Integration for the use of Engineers, &c. By A. S. PERCIVAL, M.A. Trinity College, Cambridge, Author of "Optics" and "Notes on Optics." Second edition. London: Macmillan and Co., Limited. 1909. Pp. 114. Price 2*s* 6*d*. net.—The most important mathematical aid to the modern advancement of physical science has been afforded by the calculus, and this not only in the theoretical part of modern science but also to at least an equal extent in the practical application of science. In electricity and in engineering a knowledge of the integral calculus is essential for all who would be guided in their work by more than the thumb rules derived from practical experience. It is essential, however, that any treatise intended for those who have to deal with problems needing the integral calculus should present the subject divested of all unnecessary appendages and in the simplest and most practical form, if the information is readily to take the place of the lessons of experience, and here we consider that Mr. Percival has been very successful. He has drawn up a book on integration which is really adapted to practical use. For the information of those who have no knowledge we give the following examples from Mr. Percival's book of what integration can accomplish. By integration we are enabled to find the course of a projectile which is subjected both to the influence of gravity and to the retardation of the air; to find the tension in a chain suspended at both ends as in a suspension bridge; to find the volumes or the surfaces of bodies of any regular form; and to determine the rate of cooling of a heated body. Many of these problems are soluble for particular cases without the use of the calculus, but to obtain general formulæ and to solve individual problems with rapidity the integral calculus is a necessity. This little work can be recommended to the attention of all advanced students in applied physical science.

The Therapeutics of Radiant Light and Heat and Convective Heat. By WILLIAM BENHAM SNOW, M.D., late Instructor in Electro-Therapeutics in the New York Post-Graduate School. London: Siegle, Hill, and Co. 1909. Pp. 119. Price 10*s*. 6*d*. net.—Considering the cardinal importance of heat as a therapeutic measure, the first idea that presented itself to us when we took up this book was to wonder why so little has been done hitherto in the way of bringing out a systematic treatise on heat in its different forms for the treatment of disease. We have large and small books published from time to time on the use of other physical agents, such as the X rays and electricity, but few, if any, on the subject of heat, which is perhaps as important as any. On this account we welcome this book, in which the author has endeavoured to add to our knowledge of the matter. The physical side is dealt with in a chapter that is commendably brief, and the same may be said of the manner in which certain forms of apparatus are described. Chapters on physiological effects and practical methods of application next follow, and as early as p. 49 the purely therapeutic aspect is treated. In this section we notice that seldom, if ever, does the author advise the use of heat alone in the treatment of any of the conditions referred to. Static current, X rays, and high-frequency currents are given an importance equal to, and at times exceeding, that of light and heat, so that it becomes well-nigh impossible to judge with any approach to accuracy as to how far the result is due to one or other of the several agents employed. Further, it must be admitted that at times the statements made are not scientifically accurate. For instance, the following paragraph occurs on p. 54: "It is the writer's practice in the treatment of infectious conditions to make a prolonged—20 to 30 minutes—exposure to the Roentgen ray, making use of the energy usually employed in the treatment of skin diseases for the purpose of inhibiting the activity of the germs and then permitting an interval of 12 to 18 hours before the administration of the radiant light and heat, or high-frequency current or both. The germs thus brought into a state of complete inhibition, increased by the delay, are so affected that the phagocytes brought fresh into the area, and in large numbers, with the hyperæmia induced by the radiant energy, devour them with a greater certainty. By this method it is possible to abort any accessible pus process prior to fluctuation." Again, in speaking of the treatment of chronic varicose ulcers, where he seems to have had much success, the author says: "No agent known to the writer is so energetic in removing the local induration and tissue infiltration as the static brush applied daily, following a prolonged application of radiant light and heat." We do not want, however, to spoil our appreciation of the book as a whole by labouring small points; we hope that the work is the forerunner of others dealing with this most important subject in a more comprehensive manner.

Le Lupus Érythémateux Aigu d'Emblée: Étude Clinique. (Primary Acute Lupus Erythematosus: a Clinical Study.) Par le Docteur GEORGE PERNET, de la Faculté de Médecine de Paris, &c. Paris: Jules Rousset. 1908. Pp. 135. Price 5 francs.—Lupus erythematosus is a persistent, disfiguring condition of doubtful etiology, but productive of little harm to the general health of the patient. Instances, however, do occur, though rarely, in which a case starting as an ordinary erythematous lupus rapidly develops into a widespread eczematous affection of the skin, which would not have been considered as belonging to this group if the earlier manifestations had not been recognised. Still rarer are those cases in which a general involvement of the skin occurs similar in nature but independently of any previous typical lupus erythematosus. These are the cases which Dr. Pernet has studied in this monograph. They are extremely rare, for he has been able to collect only nine examples from the whole of dermatological literature, and to these he has added one which he had observed at University College Hospital, London. The most remarkable fact about these cases is the very heavy mortality, for of the ten cases recorded here nine died. We agree with Dr. Pernet that the whole condition points to an acute intoxication, but the source of this is not evident. As to treatment, it may be mentioned that the only case which did not end fatally improved while she was taking large doses of quinine, and this drug deserves a thorough trial in any further case presenting itself. The book is a very thorough study of a rare and obscure group of cases, and we regard it as a valuable addition to dermatology.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—In a Promotion Address published in the August issue of this journal Sir Thomas R. Fraser notes the greater attention now paid to original research at our universities, and at the same time demands more facilities for the teaching of special subjects, such as ophthalmology, insanity, and so forth. Dr. N. T. Brewis writes on retroversion of the uterus, and details his method of performing the operation of shortening the round ligaments for the cure of this condition, a number of diagrams being given illustrative of the steps in the procedure. Mr. James Young discusses the anatomy and histology of the pregnant tube; this paper is also well illustrated. Dr. R. Cranston Low, in a note on the cutaneous tuberculin reaction in cases of disease of the skin, holds that, while a positive result does not prove a particular lesion to be tuberculous, a negative result is of value as excluding this infection.

The Medical Chronicle.—The first instalment of a dissertation, by Dr. Elsie M. Royle, on the composition of the urine in cases of malignant disease and the light it may throw on theories of tumour formation, appears in the August number of this magazine. The conclusions reached in the cases studied were that the total nitrogen is below normal, as is the excretion of chlorides. Uric acid appears in normal quantity, but the excretion of sodium salts is subnormal. The other constituents vary considerably in different cases. Dr. E. M. Brockbank records some post-mortem notes on syphilitic lesions, and shows that in about 60 per cent. of the cases in which such lesions were found no clinical history of the disease had been obtainable.

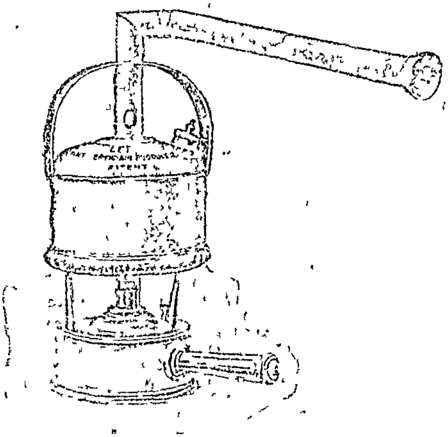
Birmingham Medical Review.—In the May number Dr. David Fraser Harris's lectures on the Essentials of Physiological History are continued, this second lecture dealing with the work of Harvey and with that of subsequent discoverers in the field of hæmatology. Dr. Herbert Manley discusses the medical aspect of the report of the Royal Commission on Poor-law reform and expresses his appreciation, in some respects, of the Minority Report; and Dr. Leonard G. J. Mackey contributes an abstract of some remarks on the commoner methods of research in clinical pathology, such as the examination of cerebro-spinal fluid, the Widal test, and so forth.

SOUTH-WESTERN POOR-LAW CONFERENCE.—The annual Poor-law Conference for the south-western district, comprising the counties of Cornwall, Devon, Dorset, Somerset, and Wilts, will be held at the Council Chambers, Salisbury, on Oct 12th and 13th, under the presidency of Sir T. Dyk [illegible] will be "T [illegible] on which [illegible] invited speaker being Dr. [illegible] inspector of the Local [illegible] purposes.

New Inventions.

LEE'S ANTISEPTIC AIR PRODUCER.

IT must be admitted that so far the apparatus employed for the treatment of respiratory disease by methods of inhalation have shown little, generally speaking, by way of scientific precision. The kettle or jug of hot water with a spoonful or two of tinct. benzoin co. added afforded a rough and ready way of obtaining hot wet vapours redolent with the aromatic and soothing resin, but the method could lay no claim to any degree of standardisation, and in many ways was inconvenient. And yet the administration of antiseptics and soothing agents by inhalation is a common demand in medical practice. An apparatus, therefore, which is designed to produce a continuous current of air made moist with steam and antiseptic with such agents as carbolic acid, guaiacol, eucalyptus, and so forth, will be very generally appreciated by the practitioner. Mr. Lee's antiseptic air producer is the best apparatus we have seen for the treatment of respiratory disease by inhalation [illegible] in fact, a successful effort to place the [illegible] As the accompanying illustration [illegible] of simple construction. It con[illegible]ner, a boiler, and an exit tube which serves the purpose of a steam injector. The injector, which takes the place of the ordinary spout of a kettle, is the principal and most important feature of the apparatus. Its construction and action are best explained by comparing it with the action of the ordinary Bunsen atmospheric burner. Steam at a slight pressure, controlled by a safety valve, escapes th[illegible] projected along the spout. [illegible] pressure steam draws in [illegible] the inlets shown on the t[illegible] result is that a current of warm moist air with an output of from 200 to 300 feet per minute is projected into the room The analogy of the Bunsen burner will now be recognised. If the water in the boiler contained 1 per cent. of phenol the steam escaping on boiling would contain the phenol in th[illegible] afterwards, of course, the mixture i[illegible] long as the water-supply [illegible] long therefore is a current of warm, moist, antiseptic air [illegible] effects the warming, [illegible] with an anti[illegible] tient suffering from any form of respiratory disease. It should be added that the spout can be turned in either a vertical or horizontal [illegible] moist, [illegible] the [illegible] dit-



THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS, BUDAPEST, AUGUST 29TH TO SEPT. 4TH.

THE Sixteenth International Medical Congress held its formal opening meeting on Sunday, August 29th, at 11 A.M., in the banqueting hall of the Municipal Festival Hall.

We append an account of the proceedings at the opening, and a note upon the important conference of the International Medical Press which immediately preceded.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

The International Association of the Medical Press and Congress Reform.

Budapest, Sunday, August 29th, 1909.

The meeting of the International Association of the Medical Press, which sat for the two days preceding the Medical Congress, attracted to Budapest a sort of advance guard of the Congress. As early as Wednesday there were already present members of the Congress which was not to open until the following Sunday. The Congress badge made its first appearance in the streets of the capital braving the surprised stare of the citizens who wondered who these strangers might be wearing an unknown device or decoration. Now that thousands of such badges are to be seen in the streets the novelty has already worn off, and yet the Congress has not begun its work. But the Medical Press conference has terminated its task, and this includes what should prove of considerable help to the central organisation of the International Medical Congress and to all future gatherings. The representatives of the Medical Press discussed at length and voted the adoption of the recommendations presented by the British section suggesting how a permanent commission and permanent organising general secretary might be constituted to manage these gatherings in the future.[1] On Thursday and Friday next week the Central Organisation, consisting of the principal officers of the Congress and the presidents and the secretaries of the various national committees, will be held. This body, the parliament of these Congresses, will not only decide where the next Congress is to meet, but whether it is to be held at a later date than usual and be differently organised. This is a matter on which there is much to say. For the moment it suffices to point out that the necessity of sweeping reforms has been unanimously proclaimed by the representatives of the International Association of the Medical Press in congress assembled.

Preliminary Festival and Improved Organisation.

Yesterday (Saturday) was the great day of arrivals, and when the members of the Medical Press Congress, having terminated their work, returned hot and weary to their hotels they found pandemonium awaiting them. Train-loads full of congressists were arriving, dusty, hot, weary, but, above all, thirsty. With the best organisation possible, when so many persons clamour at one and the same time, whether for the same or different things, they cannot all be immediately served. And the hurry was all the greater, as there was to be a reception that evening at the Fine Arts Gallery in the City Park. This brought back to my mind sinister recollections of the International Congress of Hygiene when it met at Budapest in 1894. Here a reception had been given and a lot of young men, who ought not to have been invited or admitted, behaved like savages at the buffet. This caused such a scandal that even a Hungarian paper published two pictures, one representing the siege of the buffet by these youths, and the other a feast of monkeys in a forest. It was good that the well-deserved gibe should have come from the Hungarians themselves. It is a pleasure to say that nothing similar occurred last night. We had better-behaved company and much better management. In addition to the large buffet there were many tables spread with refreshments in different rooms, while a number of waiters went the round of us with trays heavily loaded with cakes, ices, fruits, and glasses of champagne. There was therefore no necessity to crowd up to the buffet, and it was found possible to provide amply and without disorder for a large crowd. But it was not possible to prevent the heat, which, due partly to the overcrowding, was so appalling that some persons fainted and one man was carried out unconscious from my immediate neighbourhood. The number of persons who attend congresses must somehow or other be reduced if their work is to count in the world. I must allow myself one grumble. The cloak-room department was badly managed. The annexes were not large enough nor were there sufficient attendants. Consequently the guests could not get their clothes back quickly enough and at last lost patience, forced the barriers, and endeavoured to find their things for themselves. Of course, what little order remained was soon destroyed, cloaks and hats were tossed about and trampled upon, and there was a regrettable interchange of property. One of the delegates of the Belgian Government had the good fortune to recognise his coat, though it fitted very nicely on another person's back. Indeed, the fit was so perfect that the wearer stoutly maintained it was his own coat, for he had not noticed the small tell-tale Belgium decoration in the button-hole. A further reference to the tailor's name and Belgian address marked behind the collar fully established the right of ownership, and the coat was restored. But the hat which was with the coat had been taken by someone else and could not be found, so the representative of the Belgian Government had to return bareheaded to his hotel, well pleased, however, at his good fortune in recovering his coat. For my part, foreseeing what was likely to happen, I clung tight to my coat and hat all the time, but this increased my suffering from the heat.

The Opening Ceremony.

An hour before the opening ceremony, which was fixed for 11 in the morning, a crowd had already assembled in the streets to see the members of the Congress enter the great Municipal Festival Hall where the ceremonial opening of the Congress was to take place. It is the same hall which was utilised for the Congress of Hygiene in 1894, but it seems to me that it was then even more crowded than to-day. On both occasions, however, there was not even standing room left long before the proceedings began. The meeting was certainly an imposing sight. Though broad daylight, the hall was fully illuminated, which made the marble walls and columns, the gilt ornamentation and the gold or silver braiding of the uniforms shine more brilliantly. When His Imperial and Royal Highness the Archduke Joseph stepped on to the platform the whole audience rose. At the same moment a powerful choir sang vigorously the Hungarian Anthem. Instantaneous silence succeeding the loud buzz of conversation, and the slow and solemn strains of the hymn produced a thrilling effect. If the rest of the ceremony hardly gave so impressive a sensation as its opening this could not be expected. Moreover, the hall is some 40 to 50 feet high, surrounded by galleries, and as the acoustics are shocking only those who were quite near to the platform could hear the loudest speakers. And as speakers are appointed on account of their position, and not in consideration of their powers of speech, a good deal of what was said had to be taken on trust.

The Archduke JOSEPH spoke in French and welcomed the congressists to the Hungarian capital with the following words: "It is with special satisfaction that I have the honour of opening, in my capacity of Representative of his Apostolic, Imperial and Royal Majesty, the Sixteenth International Congress of Medicine at Budapest. To be at the service of humanity, to consecrate all the physical forces and intellectual faculties which God has given to the welfare of our fellow beings, remains the ideal existence. Now the individual value of each man's work is augmented in proportion as it becomes more profitable to other individuals and to humanity as a whole. And what is true for any individual is still more true for an entire profession, and in this respect all men who have a just perception must recognise that there are few professions which exercise on the individual, on the family, and, as a final consequence, on the entire life of States, an influence as profound and as widespread as that exercised by medicine. Happiness, to which every living being has a right, is dependent on vigorous health, and so is the success of nations. When by efforts you seek to preserve the health of entire populations we must show you not only individual but general gratitude, the gratitude of all mankind."

The next speaker was His Excellency Count ALBERT APPONYI, the eloquent Hungarian Minister of Public Education and Public Worship. He expressed the satisfaction of his Government at being able to receive in Budapest the [illegible] As a working [illegible] d by the ever-[illegible] ession exercised over the destinies of the peoples. Formerly the nation which fought best was the most highly esteemed. To-day intellectual and moral development and social well-being held the first rank. Nations were judged according to their progress in public hygiene. Health was more and more estimated as the evidence of a nation's strength. Such congresses showed that nations would now compete not in destroying but in saving life—an infinitely more reasonable as well as more humane programme.

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[1] THE LANCET, August 21st, p. 554.

The Prefect of Budapest, M. CALMAN DE FÜLEPP, then welcomed the Congress in the name of the city. Gatherings held to promote progress by preserving the greatest of all treasures—health—were of the first importance, and he welcomed especially the numerous ladies in the assembly, who were helping [illegible] their work.

The President [illegible] MULLER, was unfortunately so [illegible] t attend. His inaugural address, however, was read out by an officer of the Congress and proved to be an eloquent exposition of the developments of recent medicine. Firm ground in pathological anatomy having been reached, the developments of bacteriology and parasitology followed, to be reinforced in their turn by the immense masses of work being done in the investigation of the problems of immunity. Cytology has developed, he said, *pari passu*, and everywhere vague inquiry has been replaced by investigation into the life of the cell, making us more acquainted with its complicated bio-chemical and bio-mechanical relations—and so we have a new hæmatology. The latest discoveries in physics and theories as to radio-activity have all been pressed into the service of medicine, not as auxiliary sciences but as integral parts of a great whole, while at every step forward a new perspective opens and a view of fresh fields is offered. After enumerating proofs of the scientific progress which has been made upon indisputable grounds by modern therapy, Dr. Muller closed his address with the following peroration: "Medicine is a science of expediency; it originated the necessity to relieve human suffering, and as pure rough empiricism. To-day we work upon the strictest scientific methods which are at the disposal of the exact physical sciences, and we have successes to point to, to which undeniable statistics bear witness, showing with what weapons medicine can safeguard the life and health of the individual, and how fortified she is to protect whole continents against the ravages of epidemics. With full right our breasts are filled with the noble consciousness that no science stands up so wholly in the service of altruism as medicine. With deep respect I have the honour to request your Imperial and Royal Highness graciously to declare this Congress *open*."

The report of the general secretary, M. Em. de Grósz, was now taken. From this it appeared that the national committees which abroad assisted in preparing for the Congress comprised in all no less than 800 members. With their help the Congress is thoroughly international. The latest figures are: United States, 202; Argentine Republic, 37; Austria, 235; Belgium, 47; Bosnia-Herzegovina, 9; Brazil, 25; Bulgaria, 18; Chili, 4; Cuba, 6; Denmark, 10; Egypt, 21; France, 281; Germany, 288; Great Britain and colonies, 97; Greece, 19; Italy, 170; Japan, 48; Mexico, 3; Monaco, 2; Norway, 2; Netherlands, 33; Portugal, 32; Roumania, 10; Russia, 228; Servia, 7; Spain, 67; Sweden, 5; Switzerland, 29; Turkey, 22; and Uruguay, 3. Adding the 1436 Hungarian members the Congress numbers 3432 adherents, accompanied by 900 members of their families. Governments are represented by 274, universities by 149, municipal and other authorities by 149, medical and other societies by 327, and diverse institutions by seven delegates to our scientific assembly. Recalling the words of Pasteur that "the realm of science embraces the whole of humanity," M. de Grósz congratulated the Congress on its international character.

After this the series of speeches of the representatives of the various nationalities began and continued according to the French language; therefore Germany—i.e., Allemagne—began in the person of Professor Uhthoff. A crowd thronged at the foot of the platform and not a word reached the press tables. Austria, which came next, was represented by Ritter von Huberler, whose speech was also a mere dumb show. Dr. Victor Desguin for Belgium was not more fortunate, but Dr. Ivanoff for Bulgaria evoked quite loud applause, because the few words he said expressing the satisfaction of his country in supporting the Congress were better heard. Professor Alejandro del Rio from Chili and Professor Agramonte from Cuba were again inaudible, and a ribald member of the audience near me said that most of the speakers must be "delegates from Mars speaking in Esperanto." Professor Salamonsen represented Denmark and Professor A. de Simonena spoke for Spain. For France Professor Landouzy, who is such an accomplished orator, was not heard so well as usual, but a good many of his graceful sentences were caught by his audience, showing that the oratorical failures were not attributable entirely to the properties of the hall. Amidst great applause he expressed the hope that the proceedings of the Sixteenth International Congress of Medicine would bring a new triumph for Budapest, and would do for the greater happiness of humanity what the Eighth International Congress of Hygiene, also held at Budapest, did when [illegible] world the results obtained [illegible] serum. For Great Britain [illegible] t loud applause, but after this the audience, overwhelmed with the heat and worried by the impossibility of hearing most of the speakers, began to leave the hall. Professor Killionzis spoke for Greece, and loud applause greeted the announcement that Professor G Baccelli would represent Italy. Alas! he was not audible at the press tables, and upon this the press representatives drew up a protest, which all signed, declaring that they were so placed as to be utterly unable to report the proceedings adequately. Professor Kitasato of Japan was loudly cheered. Dr. Guevedo y Zubieta for Mexico and Dr. Caillard for Monaco were followed by Professor Louis H. Debayle for Nicaragua and Professor V. C. Uchermann for the Netherlands. Dr. José Domywer de Olivier for Portugal expressed our feelings very well by constantly wiping his forehead with his handkerchief, and Professor de Ott, though he spoke for so large a country as Russia, made very small noise. Professor S. E. Henschen spoke for Sweden and Dr. Feurer for Switzerland, and then came the great demonstration and the one really remarkable incident of the whole solemnity. Professor Zoëros Pacha was announced as the representative of Turkey. The professor is certainly not a young man, and I remember his representing Turkey at other congresses during the darker days of Turkish history. Nevertheless, the meeting evidently took him as the spokesman of the Young Turkey Party, and by the loudest and most enthusiastic applause that had yet been heard sought to welcome the dawn of liberty in Turkey. Undoubtedly this was a political demonstration, but science needs liberty and thus its representatives ever applaud that which gives the freedom to study. Uruguay, with Professor A. C. Maggiolo, closed the long [illegible] yet one more spe[illegible] the newly elected [illegible] ociation of the Medical Press. He rose on behalf of that body, but declared that he had no speech to make because the press has to write and not to speak. He had received instructions to thank the organisers of the Congress for the press bureau they had established, and for their better understanding of the importance of the press. If some new light came out of this Congress, as had occurred at the Hygiene Congress in 1894, the press would spread the good tidings rapidly and widely throughout the world.

After these words the National Hymn was sung again and the vast audience slowly dispersed.

THE GENERAL SESSIONS.

At the general sessions addresses will be delivered in plenary congress by Professor BACCELLI (Rome); Dr. E. F. [illegible] Cancer; Professor M. KUTNER (Berlin); [illegible] Pathologie Exotique; Pro-[illegible], Artificial Parthenogenesis [illegible] and Pathology of the Cell.

We publish this week (see p. 691) Dr. Bashford's address on Cancer, which was delivered on Monday, August 30th.

(FROM OUR SPECIAL MEDICAL CORRESPONDENT.)

The First Reception.—Congress Literature.

Budapest, August 29th, 1909.

THE first of the social entertainments in connexion with the Medical Congress was held on Saturday evening, August 28th. It took the form of a "Soirée of Welcome," held in the gallery of Fine Arts. This is a rather attractive building situated some little distance from the centre of the town, on the borders of the City Park. The arrangements were good, and there was not more crowding than is usual, and apparently inevitable, in connexion with such social functions. The crowd circulated freely along the central series of rooms, which terminate in a semicircular hall, and in this an excellent buffet was placed. The lateral series of rooms, through which it was also possible to circulate from one end of the building to the other, bore the numbers of the different sections of the Congress, and this certainly rendered somewhat easier the task of finding one's friends and acquaintances—an otherwise almost hopeless task in the general crowd that filled the central halls. These halls are at present, with one exception, entirely bare of pictures or other objects of the fine arts. The sole exception is the entrance hall, on either side of which is hung a large picture by the Hungarian artist J. Benczur. That on the left represents "The Hungarian Nation rendering Homage to the King—i.e., the Emperor-King Franz Josef—on the Occasion of the Millennium of Hungary"; it was presented to the Hungarian nation by the late Dr. Charles Meszaros. The picture on the right, "The Recapture of Buda," is the property of the municipality of Budapest. Both are fine examples of a clever artist, to whom evidently vivid colouring and no less vivid action make a specially strong appeal. The soirée lasted from 9 till 11 o'clock, but before the latter hour many had left. The night was a particularly close one and the air in the crowded rooms had inevitably become somewhat hot and exhausted before the evening was over. A good band, it should be added, discoursed an excellent musical programme throughout the entertainment.

Congress Literature.

Even before the opening of the Congress the literature in connexion with it was voluminous. Each "congressist" on presenting his "card of identity" at the central office received a small pamphlet containing a calendar of the Congress and a number of detachable coupons. In return for one of the latter, he (or she) received a large packet of printed matter, neatly strapped together. The packets could be sent to the member's hotel (or other address) on payment of 1.50 crowns. Each packet contained the following: "Les Facultés de Médecine des Universités Royales Hongroises de Budapest et de Kolosvár," a cloth-bound volume of nearly 400 pages, profusely illustrated, the contents of which may be gathered from the title; "L'Hygiène Publique en Hongrie," a small 8vo volume of over 300 pages, describing at great length what has been done and is being done for the public health in Hungary; "La Hongrie Charitable: l'Assistance Publique et les Hôpitaux en Hongrie," a rather thinner volume of the same size as the one on "Public Health"; a similar volume, but of 90 pages only, and printed in English (for English-speaking members), called "The Therapeutic Bath, St. Margaret's Island," in which that excellent bathing establishment is fully described and illustrated; an album of well-reproduced photographic views of "Budapest"; a copy of the August number of *La Revue de Hongrie*, the organ of the French Literary Society of Budapest; a pamphlet on the Budapest Voluntary Ambulance Society; another by Dr. Ohyzer (head of the Public Health Department of the Ministry of the Interior); a copy of the *Hungarian Balneological Review*; and a special Congress number of *Hungary*, an illustrated fortnightly society journal, printed entirely in English. Copies in the French, German, and English languages were distributed to the congressists. A little pocket guide and map of Budapest is among the most useful though one of the smallest of these publications. In other portions of the central building the congressist was presented with the Congress badge. This is a square bronze medallion with rounded top; it bears, on one side, the seated figure of Æsculapius, and the words "Conventus Medicorum XVI. Internationalis," and, on the other, a view of Budapest and the Danube, the united arms of Austria and Hungary, and the words "MCMIX. Budapestini." The badge is the design of one of Hungary's best-known sculptors, M. Géza Vastagh, and is a really admirable work of art. More than one of the many monuments in the squares and gardens of Budapest are from the chisel of this sculptor. For ordinary congressists the badge is hung by a white ribbon; in the case of delegates of Governments the ribbon is red; in that of members of national committees, delegates of universities, and municipal authorities it is green; while members of the central organisation of the Congress are distinguished by their badge hanging from a ribbon of red, white, and green—the Hungarian national colours.

Other objects presented to the member on his first visit to the Central Office were the first number of the daily *Journal* of the Congress and a good plan of the city of Budapest; and an "honorary ticket," entitling the bearer to free use, during the period of the Congress, of any of the four following bathing establishments: those on Margaret Island, the Rudasfürdö, Császárfürdö, and the Ráczfürdö baths.

The first number of the daily *Journal* of the Congress was issued on Saturday (August 28th). It is printed in parallel columns, in English and Magyar at one end; then you turn it upside down and find that the same matter appears in French and in German at the other end; the two (or rather the four) meeting in the middle, the whole number containing 24 pages, 12 from each end. The English columns are excellently edited in good idiomatic English, with none of those blemishes that frequently disfigure polyglot international literature of this kind.

Together with the *Journal*, in the form of six separate appendices, were distributed a series of plans of the different floors of the central building of the Congress; the printed regulations for the conduct of the sectional meetings in the same four languages as the journal; the full programme of all the sections, covering 34 pages of large size, printed in double columns; full lists of members of the central organisation of the Congress, of the sectional bureaux, and of the national committees (these lists cover 11 pages of the same size); lists of the delegates from governments, from universities, from municipalities and other authorities, from medical and scientific societies, and "various" delegates (an addition which covers over 15 pages); and finally an alphabetical list of all the members of the Congress, with (where possible) the name of their hotel or other address in Budapest.

THE SECTIONS.

SECTION I.—ANATOMY AND EMBRYOLOGY.

President, M. DE LENHOSSÉK.
Managing Secretary, M. K. DE TELLYESNICZKY.

Dr. E. LAGUESSE (Lille), in a paper on

The Islands of Langerhans of the Pancreas,

described his investigations made on the body of an adult man who had been executed. He laid particular stress upon the presence of a large amount of secretory material in the cells with the appearance of small closely packed vacuoles and also of little granules, and maintained that these appearances gave the islands all the characters of a gland with an internal secretion, or "endocrine," and strictly comparable with the appearances of the parathyroids. He proceeded to consider all the facts that seemed to substantiate his theory of Balance (between the internal and external secretions of the pancreas), as against the theory of the perpetual independence and stability of function of the islands of Langerhans, submitting that—1. In adults there is a demonstrable continuity between some of the islands and the acini, and more directly between the islands and the excretory ducts of the gland. 2. In certain places the mixture of the "exocrine" and "endocrine" gland elements is such as to suggest a transitory state. 3. There is to be found, on the one hand, a whole series of transition forms between the acinar and insular elements, and, on the other hand, an *inverse* series demonstrating the reconstruction of the acini from the islands. 4. An increase in the insular substance can be provoked *experimentally at the expense of the* "exocrine" parenchyma of the gland, and pathological processes can effect the same result. 5. Recently the theory of Balance in the pancreas (that is to say, the complete evolutionary cycle of the island of Langerhans with its return to the acinar form) has received experimental proof. In conclusion, there is an intimate connexion between the two glandular elements of the pancreas, and a continual balance maintained between them by their mutual metamorphosis during the whole of life.

SECTION II.—PHYSIOLOGY.

President, M. F. DE KLUG.
Managing Secretary, M. PEKÁR.

Dr. P. ALBERTONI and Dr. P. TULLIO (Bologna) presented a joint paper on

The Methods of Studying the Diet of the Various Classes of Society.

In support of the American plea of Dr. Atwater asking physiologists to adopt a [illegible] dietetic food-values of the [illegible] the methods they themsel[illegible] on. During the observa[illegible] families continue their [illegible] usual conditions. The dietetic factors are always considered in relation to the physical, moral, and economic conditions of the subjects of investigation. To determine the physiological value of any foodstuff the subjects are given their ordinary diet with the food in question added, and all the food used by them is submitted to a preliminary chemical analysis. It is important that the methods of analysis and of deduction employed by all physiologists investigating this problem should be the same.

SECTION III.—GENERAL AND EXPERIMENTAL PATHOLOGY.

President, M. F. TANGL.
Managing Secretary, M. P. HÁRI.

Dr. BESREDKA (Paris), in a note on

The Preventive Treatment of Anaphylaxis,

submitted the following points: (1) Anaphylactic sequelæ can be modified but not entirely prevented by the heating of therapeutic serums to 56° C. for an hour on four days running; (2) ether, or better, alcohol narcosis (however the latter be induced, by the mouth, or by hypodermic, peritoneal, or rectal injection), confers a complete but transitory immunity; (3) the prophylactic injection of serum that has been heated to 80° confers a sure and lasting immunity which is established by slow degrees after a slight reaction; (4) the best way to prevent anaphylactic complications consists in the prophylactic rectal injection of serum, or, better still, the injection of a very small dose of the same serum under the skin, to induce the formation of an anti-anaphylactic substance.

SECTION IV.—BACTERIOLOGY AND PATHOLOGICAL ANATOMY.

President, M. H. PREISZ.
Managing Secretary, M. E. KROMPECHER.

Professor N. PANE (Naples) read a paper on

The Nature of Antagonism in Bacteria and its Practical Importance.

Amongst the pathogenic microbes only the bacillus of anthrax can be destroyed in the system by the antagonistic action of several bacteria—streptococcus erysipelatis, staphylococcus pyogenes, bacillus pyocyaneus, pneumococcus, and bacillus prodigiosus—under special conditions. The most favourable of these conditions is the subcutaneous inoculation of anthrax mixed with one of the others in suitable doses. The particular state of virulence or non-virulence of the antagonists and the choice of the animals for experiment are of great importance. The antagonistic action of a bacillus may meet with complete success in [illegible] even when it fails, or is only partially s[illegible] land or when test[illegible] oratory. The substance or substances which act against the bacilli of anthrax in the organism belong partly to the antagonist and partly to the antibodies in the organism itself. As regards the nature of the antagonistic substances, confining ourselves to the bacillus pyocyaneus, which is the most energetic and the most certain in its action, it is to be observed that the broth culture of this bacillus, killed by exposure to a temperature of 55° C. for an hour, shows in the test-tube a bactericidal action at 35°–37° C. by [illegible] mixed with absolute ethyl alcohol a clearly demonstrable bactericidal substance is diffused into the alcohol, although it is readily separated from the alcohol by evaporation at 60° C. The practical application of the resistance of pyocyaneus to anthrax might be made in the vaccination of animals susceptible of spontaneous infection, since a considerable immunity can be conferred on animals under experiment by means of subcutaneous inoculation with the anthrax bacillus mixed with the soluble products of pyocyaneus.

SECTION V.—THERAPEUTICS.

(PHARMACOLOGY, PHYSICAL THERAPEUTICS, BALNEOLOGY.)

President, M. A. DE BÓKAY.
Managing Secretary, M. Z. DE VÁMOSSY.

Dr. A. CURCI (Catania) read a paper on

The Physiological and Therapeutical Importance of the Alkalies and the Alkaline Earths.

In the first part of his paper Dr. Curci discussed the physiological action of potassium, rubidium, cæsium, thallium, sodium, lithium, calcium, strontium, barium, magnesium, and beryllium. He contradicted the commonly held view that potassium is a cardiac depressant, maintaining that it stimulates the muscular elemen[illegible] and strengthens their action. [illegible] splanchnic muscles, as have [illegible] calcium, strontium, and bari[illegible] vascular stimulants. Dr. Curci held that lithium was a nervous stimulant, but had no action on the muscular tissues. The alkaline earths all depressed the functions of the nervous system, but magnesium and beryllium had no action upon the muscles. Dr. Curci advanced a theory of the action of these substances on the various systems in the animal and vegetable organisms. The second part of the paper was devoted to a consideration of the mineral salts in the tissues in health and disease. The interesting observation was made that tissues heated by an inflammatory process absorb salts and other substances more readily than when in the normal state, and this applies to substances which do not normally occur in the tissues. In the third section of his paper Dr. Curci considered the biological rôle of the metals potassium, calcium, and magnesium. Whilst sodium and ammonium increase excitability in the nervous tissues, calcium and magnesium in combination with those tissues control the currents of nervous energy and offer a certain amount of resistance to the conductive power of the nerves. They are accordingly true tonics. He held [illegible] power of the nucleus, [illegible] he described the influence of the [illegible] nutrition and the secretions.

SECTION VI.—INTERNAL MEDICINE.

President, Baron A. KORÁNYI.
Managing Secretary, H. BENEDIKT.

Dr. H. HUCHARD (Paris) read a paper on

Arterio-Sclerosis, including its Cardiac Form.

The chief points of Dr. Huchard's argument were the following. There exists great confusion amongst pathologists as to the nature and process of arterio-sclerosis, more than 20 [illegible] accounts of it having been advanced, so that it is [illegible] ional definition of the dis[illegible] Neither can pure experi[illegible] inical evolution of arterio[illegible] entirely a vascular cha[illegible]

performed on children under eight years of age, and not until all deformity has been [illegible]
must not be performe [illegible]
recovery. It should be [illegible]
epiphysis and so that the bones lie in good apposition. Splints should be worn until consolidation is complete.

SECTION VIII.—OBSTETRICS AND GYNÆCOLOGY.

President, M. G. TAUFFER.
Managing Secretaries, M. CH. SCHMIDLECHNER and M. ET TÓTH.

Dr. VEIT (Halle) read a paper on

The Treatment of Contracted Pelves,

in which he urged that operative interference should only be undertaken when absolutely necessary, and that in all cases perforation of the living child must be avoided. In the highest grades of pelvic contraction Cæsarean section should be performed. In pelves with a moderate degree of contraction, where danger existed to the life of the mother and the child was dead, perforation was the last thing to do. In similar cases with a living child forceps should be tried with care and only for a short time, and if they failed then Cæsarean section should be resorted to. Hebosteotomy should only be practised when fever and signs of septic infection were present. In cases where the life of the child was threatened version should be attempted, and if this failed forceps should be applied and, as a last resort, Cæsarean section. Whenever possible no operative interference at all should be carried out, but any one of these operations might be necessary in certain cases.

Dr. G. WINTER (Koenigsberg) read a paper on

Rapid Dilatation of the Cervix.

He maintained that the ideal method of dilating the cervix must be one which involved no danger of excessive bleeding, of unavoidable lacerations of the cervix, or of the risk of infection, which would allow of the passage of a full-term child and permit of a complete restoration of the functions of the cervix. Two methods were available—stretching or cutting of the tissues. The former could be carried out manually, by means of a hydrostatic dilator, by a dilator such as that of Bossi, or by the body of the child. Manual dilatation possessed the advantage of requiring no special apparatus, but there was a danger of slight tears of the cervix and of septic infection. The use of a hydrostatic dilator secured complete dilatation which could be carried out aseptically; it possessed the disadvantage, however, of the likelihood of reclosure of the canal from elastic recoil. Bossi's dilator was a certain method and without danger when the cervix was unfolded, and entailed but slight danger of infection, but the risk of bad tears was considerable, and interference with the third stage of labour was not uncommon. Dilatation by means of the child's body after version [illegible]
the deat [illegible]
incisions [illegible]
section [illegible]
Dührssen's method was the best; with this procedure [illegible] quent and [illegible] child was [illegible] ion when [illegible] 20 cases were recorded, in all of which the fits at once ceased after the performance of the operation. In accidental hæmorrhage, if immediate delivery was necessary, vaginal Cæsarean section gave good results. In placenta prævia all methods of rapid dilatation were best avoided because of the risk of rupture of the cervix. In cases of septic infection also any method likely to produce tears of the cervix should not be practised. In cases where the death of the child was threatened only those operations should be performed which entailed no risk to the life of the mother. Of general conditions, eclampsia, heart failure, impending suffocation from acute lung affections, and at times tumours of the genitalia, stenosis of the cervix, and impending death of the mother, were all indications for the performance of vaginal Cæsarean section, which he considered on the whole by far the best of the various methods available for rapid dilatation of the cervix, and for which eclampsia was the strongest and most important indication.

Dr. A. MARTIN (Berlin) read a paper on

Myomata and Fertility.

He said that as a result of the great number of observed cases of pregnancy in myomatous uteri it was no longer possible to maintain the old opinion that myomata prevented intra-uterine development of the ovum. Modern views as to the causes of sterility were also incompatible with this doctrine. The abundant hyperplasia of the ovaries in myoma was probably responsible, in the first place, for the remarkable observation that elderly women suffering from myoma and marrying late in life soon became pregnant, and, in the second place, for the delay in the occurrence of the climacteric in myomatous subjects. The observed cases of married women who conceived after removal of myomata, although they had previously been barren, were not sufficiently numerous to decide the question; there were, moreover, many associated conditions which could not be definitely ascertained.

SECTION IX.—OPHTHALMOLOGY.

President, M. E. DE GRÓSZ.
Managing Secretary, M. M. C. SCHOLTZ.

Dr. W. UHTHOFF (Breslau) read a paper on

The Eye Symptoms in Disease of the Pituitary Body and Acromegaly,

in which the cases of hypophyseal tumours with and without acromegaly were distinguished for purposes of differential diagnosis. Rare cases of acromegaly with other cerebral affections were enumerated. The results were founded upon 328 necropsies. Temporal hemianopia is the most constant symptom; typical choked disc and slight papillitis each occurred in about 5 per cent. of the cases, simple atrophic pallor of the discs in 20 per cent., and central scotoma only in occasional cases. Paralysis of ocular muscles, generally affecting the oculo-motor nerve, occurred in 10 per cent. of cases, and nystagmus in 6 per cent. The clinical course of the visual defects was then considered in detail and compared with the observations of other [illegible]
the relative frequency of the [illegible]
of the hypophysis. The pathog [illegible]
ptoms was discussed from the anatomical standpoint, and finally such other trophic and metabolic disturbances as obesity, disorders of the genital apparatus, and so on.

Dr. ELSCHNIG (Prague) communicated a paper on

Prevention of Infection in Operations upon the Eyeball.

His investigations have led him to the conclusion that in spite of careful antiseptic or aseptic precautions post-operative infection originates exclusively in the conjunctival sac, with the sole exception of rare endogenous infections. In all cases, therefore, in which the globe is to be opened the bacteria of the conjunctival sac should be examined and operation undertaken only if pathogenic organisms, especially streptococci and pneumococci, are absent. The most trustworthy methods are by culture experiments on both solid and fluid media, such as serum bouillon and serum agar plates. The use of pyocyanase and perhaps mercury oxycyanate is most to be recommended for the elimination of pathogenic organisms. Immunisation procedures and even disinfection of the field of operation have little or no value, but general infection and disease of other organs must be treated. When infection of the conjunctival sac is suspected, the greatest care m [illegible]
operative procedure. [illegible]
conjunctival area, anc [illegible]
e.g., subconjunctival [illegible]

Dr. ANGELUCCI (Naples) read a paper on

Post-operative Inflammations of the Eye caused or promoted by Auto-infection.

[illegible] sometimes inappreciable to the patient, may cause post-operative inflammation in the eye. 1. Diseases of metabolism.—(*a*) [illegible] by a slight [illegible] old people an [illegible] upon the excretion of [illegible] post-operative course in cataract extraction. In Bright's disease iritis occurs almost always, sometimes after simple iridectomy, especially if the disease is advanced. (*b*) Diabetes:

Cataract extraction may be free from inflammatory complications and consecutive hæmorrhage in diabetics of good constitution. In the late dystrophic stages, usually associated with albuminuria, even if the sugar excreted in the [illegible] n quantity untoward results are to [illegible]: This disease affords no contra- [illegible] traction. Gouty attacks occurring [illegible] alescence do not appear to exercise [illegible] hen gout is accompanied by consti- [illegible] ces of the intestinal tract there [illegible] y from inflammation. 2. Diseases of the mouth.—In these cases iritis is common after extraction of cataract and may eventuate in suppuration. 3. Affections of the gastro-intestinal tract.—Constipation and disorders of digestion are a potent cause of post-operative iritis. It occurs from the fourth to the eighth day and is ushered in by increased conjunctival secretion, often affecting both eyes. 4. Diseases of the bladder.—Dr. Angelucci has seen two cases of iritis in iridectomy associated with chronic vesical catarrh in spite of minute precautionary measures. Extraction of cataract has been followed by hyperæmia of the iris, although sero-therapy was employed. 5. Influenza.—A case of cataract extraction during an attack of influenza resulted in the loss of eye from panophthalmitis. 6. Furunculosis and abscesses.—Hypopyon ulcer supervened on an iridectomy in a patient with boils, and the eye was lost from panophthalmitis in an old man who had an abscess and was operated upon for cataract.

Dr. FELIX LAGRANGE (Bordeaux) made a communication on

The Treatment of Chronic Glaucoma.

He began by passing in rapid review all the means, medical, surgical, and operative, which have been employed in the treatment of glaucoma, and he laid particular stress on operations designed for lessening ocular tension. He dealt with iridectomy and sclerotomy as well as section of the sympathetic, and gave it as his opinion that all the intra-ocular operations only succeeded very imperfectly in attaining the object of the perfect operation—namely, a fistulous or filtration cicatrix by which evacuation can be effected when the tension is too high. Dr. Lagrange described his operation for this end in precise terms. It consists essentially in a sclerectomy made at the level of the canal of Schlemm, and comprising all the thickness of the sclerotic. The incision should be made in such a way as to cut the insertion of the ciliary muscle, by which means the choroidal space will be brought into communication with the anterior chamber. The section of the sclerotic opens a free passage for the intra-ocular fluids, which can thus drain out under the conjunctiva. Dr. Lagrange added that in eyes with permanently increased tension sclerotomy should be followed by an iridectomy in order to avoid the inclusion of the iris. In cases of simple chronic glaucoma where *the increase in tension is intermittent* or very slight, simple sclerotomy should suffice to produce an effective filtration cicatrix.

SECTION X.—DISEASES OF CHILDREN.

President, M. J. DE BÓKAY.
Managing Secretary, M. P. HEIM.

Dr. J. P. CARDAMATIS (Athens) read a paper on

Infantile Malaria,

a subject which is, of course, of particular importance in Greece at the present day. He began by pointing out that children at the breast are less attacked with malaria than at any other age, infants during the first year of their age enjoying a great comparative immunity. During the second year of life the liability to attack is not much increased, but between the ages of from two to seven years, and for some reason or other especially between the ages of from two to three, children are particularly subject to the poison of malaria. Dismissing with a few words the idea that paludism of the mot [illegible] or, indeed, that it could have any p [illegible] health of the fœtus, Dr. Cardamatis [illegible] constantly led to believe the placen [illegible] antitoxic material which resists the [illegible] rnal hæmatozoa, destroying them at the surface of t [illegible] among nurslings and little children th [illegible] in susceptibility to malaria, the same [illegible] ng met with as prevails among the indigenous inhabitants of tropical regions, though perhaps on a somewhat lower scale. Contrary to what has been affirmed by Plehn, the form of paludism which confers immunity does not always result in anæmia. The natural immunity which has also been observed among children entirely differs from that relative immunity mentioned by Koch, which is due to a great frequency of infection during childhood. It differs also from that immunity which has been observed by Celli in the environs of Rome, and which is attributed to the periodical development and exhaustion of intensity of epidemics. Both the child and the adult in Greece are most frequently attacked with æstivo-autumnal malaria of the tertian type.

SECTION XI.—NEUROLOGY.

President, M. E. JENDRÁSSIK.
Managing Secretary, M. CH. SCHAFFER.

Professor H. OPPENHEIM (Berlin) read a paper on

The Diagnosis and Treatment of Tumours within the Spinal Canal,

in which he came to the following conclusions: 1. The differential diagnosis between tumours springing from the meninges and from the spinal column itself can scarcely be said to be yet [illegible] 2. For the diagnosis between intramedullary [illegible] new growths important but not absolu [illegible] ptoms are existent. Of these the chief is the constancy of the upper level of the lesion. Nevertheless, the collection of cerebro-spinal fluid above the tumour and the frequently accompanying meningitis serosa circumscripta may cause this level apparently to vary and thereby reduce its diagnostic value. For other reasons also the upper level may seem higher than it really is. Criteria for distinguishing between meningeal tumours and spinal gliosis are not trustworthy. 3. Serous spinal meningitis presents more of the characteristics of spinal tumours than any other extramedullary disease. The author thinks that the aids to differential diagnosis mentioned by Sir Victor Horsley cannot be depended on. 4. Spinal medullary "pseudo-tumours" are to be considered with reserve. 5. The segmental diagnosis of spinal tumours may be complicated by the existence of secondary serous or fibrous meningitis. The symptoms of a tumour may be referable to a level below the site of the tumour. Therapeutic results are distinctly encouraging. Reference was made to 25 cases of operation, with 13 cures.

Dr. SICARD (Paris), in a paper on

The Treatment of Facial Neuralgia by Injections of Alcohol,

said that not all so-called facial neuralgias are capable of being treated by alcohol injections, but only those of peripheral origin and "true" facial neuralgia. For the peripheral group the foramina usu [illegible] he *supra*- and infra-orbital and the mental [illegible] p are the inferior dental canal and the [illegible] canal; the deep foramina are the foramen rotundum and the foramen ovale. The best medium is 80 per cent. alcohol, with menthol (2 per cent.) and novocaine (1 per cent.). Dr. Sicard has met with no complications whatever beyond a local œdematous reaction. The cure lasts from one to two years, at the end of which time the treatment can be repeated. The method is of no value unless the trunk of the nerve is penetrated by the alcohol, the evidence of which is anæsthesia persisting in the distribution of the branch involved.

Professor FRANKL-HOCHWART (Vienna) discussed

The Diagnosis of Hypophyseal Tumours without Acromegaly.

He gave an analysis of 155 cases collected from the literature, as well as some private cases, and noted the occurrence, apart from the general symptoms of intra-cranial growth, of psychical disturbanc [illegible] frequent in these patients; [illegible] sometimes opt [illegible] polydipsia, an [illegible] tients are often [illegible] otence and amenorrhœa are [illegible] est of sexual development and a degree of adiposis are often met with (degeneratio adiposo-genitalis). The duration of the disease is from several months to 30 years. Tumours of the pineal body may present somewhat similar features, while there are certain forms of constitutional adiposity and certain cases of diabetes insipidus in children that may require to be differentiated.

SECTION XIII.—DERMATOLOGY AND VENEREAL DISEASES.

President, M. S. Róna.
Managing Secretary, M. E. Basch.

Sir **Malcolm A. Morris** (London) read a paper on

The Treatment of Lupus Erythematosus.

The disease appeared to him to be essentially a chronic inflammation of the skin, local in origin, and depending on a condition of the circulation which makes the integument prone to vaso-motor disturbance. This may cause a predisposition to toxic infection, but neither the fact of such infection nor its nature has been positively demonstrated. Each [illegible] peculiarities. The [illegible] Under the former head must be included careful regulation of the diet, so that the intestine may not be loaded with materials that may form a favourable soil for infection. Anything, like coffee and tea, which causes flushing of the face, is contra-indicated. Quinine is often useful. Locally, in the hyperæmic stage, he prescribed cooling lotions and ointments of subacetate of lead. Ichthyol in the form of a lotion or an ointment he also found to be among the most useful of local remedies. In chronic cases the constant application of a strong solution of ichthyol is the best remedy, but iodine liniment is also valuable. In severe conditions linear scarification or light touches of the thermo-cautery he found oft[illegible] ome- tim [illegible] the Fin [illegible] are par [illegible] kening of the integument. *Radium may be applied to limited areas for the same purpose.*

SECTION XV.—RHINOLOGY AND LARYNGOLOGY.

President, M. E. de Navratil.
Managing Secretary, M. Z. Donogány.

Dr. **M. Grossmann** (Vienna) read a paper on

Nasal Asthma.

He said that experimental researches undertaken in the hope of explaining the phenomena of nasal asthma showed that electrical or mechanical irritation of the nasal mucous membrane led to a notable disturbance of the cardiac function, followed by a considerable engorgement of blood in the pulmonary circulation and by an increase in the external dimensions of the lung. In curarised animals this increased volume of the lung caused a rise of pressure in the intrathoracic space and a depression of the diaphragm. This effect of nasal irritation was completely absent if either the second branch of the trigeminus nerve or the two vagus nerves were previously divided. There was therefore reflex action in a curved path the centripetal portion of which was formed by the vagus nerve. This enlargement of the lung was not caused exclusively by the accumulation of blood, but also by the fact that [illegible] pulmonary capacity—i.e., the available pulmonary area—[illegible] creased in direct proportion to the engorgement with blo[illegible] The lung became larger not only as regards its external dimensions, but also as regards its intrapulmonary capacity. In accordance herewith the intrapulmonary pressure, unlike the pressure in the intrathoracic space, fell when the pulmonary circulation was engorged with blood. This enlargement of the lung was accompanied by rigidity which seriously interfered with respiration.

Dr. **Citelli** (Catania) read a paper on

Adenoid Growths.

After referring in his historical remarks to the very great merit of Meyer in making known to the scientific world such a frequent and important disease, he recorded briefly the normal and pathological anatomy of the tonsil, founded also on extensive researches of his own. He dealt with cystic formations under a separate heading. He maintained that in order to be able to establish with some [illegible] is required of the normal evolution of the tonsil in man, and not only extensive clinical knowledge in regard to it but anatomical knowledge besides, obtained by means of systematic observations made on dead bodies. As regards the normal [illegible] referri [illegible] expres [illegible] are of [illegible] beside [illegible] of their position they may also serve as a means of exit for infection, and in some cases, when the defensive elements are not sufficient for their purpose, as a means of ingress. He does not believe that the tonsils belong to the organs concerned with internal secretion, but in view of certain general or secondary disturbances which are found in subjects with adenoids, and which often disappear after an operation, and more especially on account of certain anatomical researches of his own, he believes it probable that hypertrophy of the tonsil alone can determine both functional and anatomical changes in the whole pharynx. As to etiology, he divides the causes of this condition into congenital and acquired; these latter, however, will only provoke the growth of adenoids in predisposed subjects. He divides adenoid symptoms into local symptoms—disturbances in nasal respiration and its relative consequences, disturbances in the other respiratory organs, vocal disturbances, auricular disturbances, and general or secondary symptoms—alterations in the circulation, psychic disturbances, exophthalmos, spasms of the larynx, night-terrors, nocturnal enuresis, and nervous cough, and he deals briefly with each of the above-mentioned symptoms. The treatment in the majority of cases is operative. Almost all the instruments designed for the purpose are good, in experienced hands, the best of all, however, being the spoons with a ring and adenotomes. Among the various ringed spoons he gives the [illegible] che, and when operating on a [illegible] modified by himself as to its [illegible] Delstanche's, and, finally, a very small size that he has made and which is used for lateral growths and for growths in unweaned infants. Finally, he points out the social importance of adenoid growths, which can exert a great influence over the physical or psychological development of individuals, and hence the great utility of making such a disease and its consequences known to the public.

SECTION XVI.—OTOLOGY.

President, O. de Lichtenberg.
Managing Secretary, B. Szenes.

Dr. **E. Schmiegelow** (Copenhagen) read a paper on

The Indications for the Operative Treatment of Secondary Suppurative Labyrinthitis and the Method of Treatment.

The paper was based on the observed results of 42 cases of labyrinthitis following purulent conditions of the middle ear. In ten cases the labyrinthitis was either of the partial circumscribed or else of the serous type, and they all [illegible] of the cavity of the [illegible] consisted of diffuse [illegible] complete deafness. [illegible] not indicated in all the cases of secondary lesions of the labyrinth; the indications for this operation were not derived solely from the [illegible] into the cavity of the labyrinth. The labyrinth might be opened in various ways. The method recommended by Jansen and Neumann ought not to be the principal one. [illegible] fiable [illegible] to the [illegible] the [illegible] with [illegible] chisel [illegible] on to [illegible] orde [illegible] was [illegible] and after this the semicircular canal, the vestibule, and the cochlea were opened. In this manner the facial nerve could be preserved during the complete removal of the labyrinth. At the end of the operation the nerve could be seen descending freely through the cavity which was left. In 22 of the 32 cases of purulent diffuse labyrinthitis the treatment consisted only in performing the radical operation on the middle ear. Of these 22 cases two died from complications existing previously to the operation. Of the remaining 20 patients two died, whilst 13 (i.e., 65 per cent.) recovered.

SECTION XVIII.—HYGIENE AND IMMUNITY.

President, M. L. DE LIEBERMANN.
Managing Secretary, M. P. KLASZ.

Dr. TAAV. LAITINEN (Helsingfors) read a paper giving a general view of

Recent Researches on the Hygienic Importance of Alcohol.

He summarised his conclusions under the four following heads: 1. The importance of alcohol as an article of food is rendered very questionable by recent researches. 2. These researches prove that alcohol diminishes the natural power of the tissues to resist injury, promotes degeneration, and has a disastrous effect on future generations. 3. The questions of relation of alcoholic liquor to crime and of the manufacture and sale of such beverages deserve the serious consideration of the legislature. 4. It is the duty of medical men to direct more attention than formerly to the alcohol question, and by careful study to decide whether recent researches are justified or not in regarding alcohol and alcoholic beverages as a poison and one of the principal causes of degeneration in the human family; they ought also to consider whether it would not be advisable in medical practice, and especially in hospitals, either to banish it altogether or at least to prescribe it with the same care as other poisonous drugs. In this matter the attitude taken up by medical men as representatives of public hygiene was of quite exceptional importance, and afforded an illustration of the passage in Homer, quoted by Bornstein, to the effect that one physician was of more consequence than a number of other men.

SECTION XX.—MILITARY AND NAVAL SANITARY SERVICES.

President, J. KEPES.

Managing Secretary, A SZEPESSY.

Dr. LARRA Y CEREZO (Madrid), in a paper on

The Sanitary and Hygienic Matériel of Armies, with Especial Relation to the Spanish Army,

pointed out the importance of the sanitary *matériel* in modern warfare, and described the units approved in the Spanish army from the point of view of the provision of sanitary and hygienic *matériel*. As a result of this plan each division of the Spanish army will take into the field a complete hospital, with every necessary appliance for 200 beds, distributed among 16 tented wagons. As a complement to this hospital installation the division is further equipped with four wagons, each containing surgical and medical appliances, each with 300 dressings, and the pharmaceutical necessities and material for clinical investigation in the hospital; four wagons of appliances; a food-supply wagon, which provides food for the hospital of 200 cases for six days; and 24 ambulance wagons. All these units correspond to the divisional field ambulance and the divisional hospital. The latter also has at its disposal a disinfecting stove, bath, apparatus for sterilisation by heat and by ozone, a reservoir wagon of water with a filter, and another for chemical and bacteriological analysis and for radiographic investigation. In the regiments the *matériel* for sanitary service include the following sealed patterns: First, a first field dressing for each man; second, an emergency knapsack for each company; third, a medical saddle-bag or wallet for each squadron or battery; fourth, a medical haversack; fifth, a medical chest per battalion; sixth, a reserve chest per battalion; seventh, a medical vehicle for each battalion; eighth, a case of surgical instruments; ninth, a case of amputation instruments for mounted corps; tenth, a service stretcher; eleventh, a Swedish chair; and twelfth, an ordinary litter. Each army corps has a hospital train. Spain has three large establishments to provide all the raw material, and sealed patterns of *matériel*, including vaccines, prophylactic and therapeutical serums, drugs, &c. These establishments are: the Military Health Park, the Central Medical Laboratory, and the Institute of Military Hygiene. All the sanitary units assigned to each division in time of war are calculated to provide the division with about 46,000 to 49,000 dressings—that is three per head, one first field dressing, and two for secondary treatment. Dr. Larra y Cerezo terminated his report by some general remarks on the subject of what the medical service and its *matériel* should be in modern warfare.

OPENING OF THE LONDON MEDICAL SCHOOLS.

Winter Session, 1909-10.

St. Bartholomew's Hospital.—The session will commence on Oct. 1st, and the old students' dinner will be held on the same evening in the great hall of the hospital.

Charing Cross Hospital.—The session will open on Oct. 4th by the annual distribution of prizes and an address to the students in the out-patients' hall at the hospital at 4 P.M. The dinner of the past and present students will take place on the evening of the same day.

St. George's Hospital.—The session will begin on Oct 1st at 3 P.M., Dr. H. D. Rolleston being orator for the day. He will take for his subject, "St. George's and the Progress of Physic." The oration will be followed by the annual meeting of the St. George's Club. The annual dinner will be held at the Prince's Restaurant on the evening of Friday, Oct. 1st, at 6.30 for 7 o'clock, Mr. A. Marmaduke Sheild, consulting surgeon to the hospital, in the chair. Tickets may be obtained from the honorary secretaries, Medical School Dinner, St. George's Hospital, S.W.

Guy's Hospital.—The opening of the session will be marked by the first meeting of the Pupils' Physical Society, the exact date of which has not yet been fixed.

King's College Hospital.—The session will open on Oct. 1st. No opening address will be delivered. The old students' dinner will be given.

London Hospital.—The session will open on Oct. 1st. In the afternoon a reception by the staff for old students will take place in the library of the Medical College from 3 to 5 o'clock. The old students' annual dinner will be held on the evening of Oct. 1st at 7.30, at the Savoy Hotel, when Dr. F. J. Smith will be in the chair. The honorary secretaries of the dinner committee are Dr. Hunter Tod, 111, Harley-street, W., and Dr. Lewis Smith, 25, Queen Anne-street, S.W.

Middlesex Hospital.—The opening address will be given by Dr. J. Strickland Goodall in the large theatre at 3 P.M. on Oct. 1st, after which the prizes will be distributed. The annual dinner will be held the same evening at the Trocadero at 7 o'clock, at which Mr. John Murray will be in the chair.

St. Mary's Hospital.—The opening of the session, on Oct. 1st, will be marked by the distribution of prizes, which will be presented by Dr. H. A. Miers, F.R.S., Principal of the University of London, at 3 P.M. The annual dinner of past and present students will be held the same evening at 7 o'clock at the Café Royal.

St. Thomas's Hospital.—The commencement of the session will be marked by the old students' dinner, which will be held at the Hotel Cecil on Oct 1st.

Westminster Hospital.—The session will begin on Oct. 4th, and the annual dinner will take place on Tuesday, Oct. 5th, at Oddenino's Imperial Restaurant, Dr. R. G. Hebb being in the chair. The secretary of the dinner is Mr. J. M. G. Swainson, 9, Welbeck-street, W.

University College Hospital.—The session will open on Oct 4th.

London (Royal Free Hospital) School of Medicine for Women.—The winter session will open on Oct. 1st, when Mrs. Fawcett, LL.D., will deliver the inaugural address at 4 P.M. Mrs. Garrett Anderson, M.D., will be in the chair.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 4, 1909.

The Working of the Midwives Act.

THE Report of the *Departmental Committee appointed by the Privy Council* at the end of last year to consider the working of the Midwives Act, 1902, has just been issued with Appendices and Minutes of Evidence, and constitutes a *most* valuable document which requires careful study by the medical profession. The Committee was a decidedly strong one, Sir ALMERIC FITZROY, Clerk to the Privy Council, *being in the chair*; Mr. H. J. STANLEY, private secretary to the Lord President of the Council, being one of the secretaries; and Dr. F. H. CHAMPNEYS, chairman of the Central Midwives Board; Dr. A. H. DOWNES, Senior Medical Inspector for Poor-law Purposes to the Local Government Board; and Mrs. ROBHOUSE, chairman of the *Executive Committee of* the Rural Midwives Association, having also seats. The other members of the committee were Mr. J. S. DAVY, C.B., assistant secretary and chief general inspector to the Local Government Board; Mr. F. E. FREMANTLE, medical officer of health to the county of Hertford; and Mr. J. TAYLOR, one of the principal clerks of the Home Office. The weak spot in an able court of inquiry, as we indicated when its proposed *personnel* was made public, is the absence of any member directly representing the interests of the general practitioner which are so closely involved with the working of the Midwives Act. It is true that much valuable evidence was laid before the Committee by Dr. J. H. TAYLOR, the *secretary of the Medical Guild of Manchester and* a well-known general practitioner in Salford, by Dr. L S. MCMANUS of Wandsworth, one of the Direct Representatives of the medical profession on the General Medical Council, by Mr. O. E. S. FLEMMING of Bradford-on-Avon, by Dr. HUGH WOODS, *secretary of the London and Counties* Medical Protection Society, and by the British Medical Association through Mr. J. SMITH WHITAKER; and that due attention was paid to their evidence is proved by the recommendation of the Committee that medical practitioners summoned by *midwives to* assistance in a case of emergency during labour should have a secure expectation of payment. But we cannot help feeling now, as we felt at the time of the appointment of the Committee, that room might well have been found for a general practitioner of experience The conditions which should be deemed to come within the category of emergency would perhaps have been discussed in a more practical manner if a general practitioner had been present to assist in the collating of the evidence offered by his colleagues. It would not, however, be generous to lay any stress on this point in view of the fact that the Committee has fully recognised the right of medical practitioners, summoned in an emergency by the midwife, to a certainty of remuneration.

The Report shows, contrary, perhaps, to what many of our readers would have expected, that the working of the Act has been on the whole satisfactory. Medical officers of health have testified to the spirit in which local supervising authorities have interpreted their duties, and Dr. A. NEWSHOLME, principal medical officer of the Local Government Board, has supplied in the form of an appendix (Appendix III.) an interesting memorandum claiming the Act as an effective instrument in the promotion of public health. *In doing this he quotes the first Appendix to the* Report, which gives statistical information with regard to mortality in England and Wales from puerperal sepsis and from the accidents of childbirth. "Puerperal sepsis" here includes puerperal septicæmia, puerperal septic intoxication, puerperal pyæmia, and phlegmasia alba *dolens*; while "accidents of childbirth" include abortion, miscarriage, puerperal mania, puerperal convulsions, placenta prævia, and flooding. The figures in relation to the incidence of these conditions are presented in three tabular statements: (1) a *table showing in respect of the years 1888–1907 inclusive* the number of deaths of females in England and Wales from puerperal sepsis, and the annual death-rates per 1,000,000 females living; (2) a table showing the rate of mortality from puerperal sepsis in England and Wales calculated in the proportion to 1000 births; and (3) a table showing the death-rates from puerperal sepsis and accidents of childbirth in England and Wales to 1000 births. The figures show that the death-rates from puerperal sepsis per 1000 births have been steadily dropping through England and Wales between 1889 and 1907. The rate had therefore declined considerably by 1903, when the Midwives Act came into operation, so that exactly what proportion of any further decline is due to the administration of the Act cannot be gauged. But Dr. NEWSHOLME considers, and we believe that medical practitioners agree with him, that there can be no reason to doubt that the Act has borne *a share in the improvement.* The Committee has adopted this view, holding that the decline in puerperal sepsis, having synchronised with the period of statutory regulation of female midwifery practice, cannot be treated as without significance, adding, however, to *this reserved expression* of opinion that it will not quote the figures "as conclusive evidence of causal connexion." This caution is necessary, for it must be remembered *that there* was considerable delay in many localities in setting up the necessary machinery for carrying out the regulations of the Act, so that exactly when the influence of the Act began to make itself *generally* felt cannot be stated. Something the *same uncertainty* must prevail, for the present at any rate, as to the incidence on the population of ophthalmia neonatorum, for the *figures* placed *before the* Committee do not *lend themselves* to any certain deductions. In this connexion some highly valuable evidence was given by Mr. SYDNEY STEPHENSON, ophthalmic surgeon to Queen

Charlotte's Hospital, London, and recently chairman of the committee appointed by the British Medical Association to inquire into the subject. Mr. STEPHENSON pointed out to the Committee that this disease, which is largely preventable, and which also is very amenable to treatment if the cases are taken in time, was responsible for almost a third of our admissions to asylums, retreats, and institutions for reception of the blind. He suggested that the disease should be compulsorily notifiable all over the country to sanitary authorities, when the public would immediately begin to inquire into the nature of ophthalmia, would become aware of the prevalence of the disease and of its enormous influence in causing blindness, and would be ready to assist in its prevention. He quoted from a report made by Dr. A. NIMMO WALKER, honorary surgeon to St. Paul's Hospital and School for the Indigent Blind in Liverpool, which describes the result of obtaining early knowledge by a system of notification of every case of ophthalmia occurring in the practice of the midwives in Liverpool. The scheme under which the ophthalmia ward in St. Paul's Hospital came into existence will be found in a paper published in THE LANCET of May 2nd, 1908. Under this scheme, as soon as the midwife discovers any sign of inflammation in an infant's eyes she notifies the case to the health department and arrangements are made for the summoning of a practitioner, a contingency which is provided for under the Midwives Act. If the parents are too poor to pay for the treatment of the child in its home it is removed to St. Paul's Hospital. The scheme has been under trial for 18 months and is found to be practicable and also to lead to good results. As, in most cases, for the proper working of the scheme, both mother and child have to be received into the hospital, it is obvious that the door may be opened to other difficulties, but as far as the treatment of a terrible disease is concerned there can be no doubt of its efficacy. The Committee appends Mr. STEPHENSON'S evidence to the report, and his views have also the support of Dr. NEWSHOLME. As a consequence, the Committee recommends that the rules of the Midwives Board in relation to ophthalmia neonatorum should be strengthened by making it the duty of the midwife to summon medical help whenever she notices symptoms indicative of danger. Her present duty under Clause 17 of the rules of the Central Midwives Board is defined as follows:—whenever after delivery the progress of the woman or child is not satisfactory, but in all events upon the occurrence of the condition in the child (*inter alia*) of "inflammation to even the slightest degree of the eyes, eyelids, and ears," a midwife must decline to attend alone, and must advise that a registered medical practitioner be sent for. So that the existing instructions seem to cover all the necessary ground, but ophthalmia neonatorum is so terrible a scourge that we welcome any more vigorous measures for its early and effective treatment.

For the present we are leaving out of consideration a number of most interesting medical points with regard to the supply and training of midwives which have been carefully considered by the Committee. This will be seen by perusal of the full summary of the recommendations of the Committee which we print in another column (see p. 742). The fact that these recommendations, though no one of them may be in the nature of sweeping change, should be so numerous, proves that an inquiry into the working of the Act had already become necessary. If it had been possible to wait a little longer undoubtedly some of the evidence laid before the Committee would have been more conclusive in character, especially the statistical side of the inquiry would have had more definite results; but where there are so many things to be said it was clearly time that a beginning of the saying of them should be made. We will confine ourselves here to noticing the recommendations for ensuring payment of medical practitioners when summoned by midwives. With regard to the remuneration of medical men the Committee had no difficulty in coming to the conclusion that an obvious and extraordinary grievance must be removed. The flaw in the Midwives Act by which the midwife was ordered to obtain medical assistance in certain cases while no arrangement was forthcoming for the payment of such assistance, was pointed out as soon as the provisions of the intended legislation were made public, but the importance of the point escaped attention, owing, probably, to the fact that discussions upon the registration of midwives were usually conducted upon the more general question as to whether legislation was necessary rather than upon any details of a particular proposal. The Act accordingly placed upon midwives the statutory duty of summoning to their assistance medical practitioners in cases of emergency, but made no provision for the payment of the practitioners. Upon medical men there was thus placed a very serious onus, and one which they have never ceased to consider absolutely unfair. They were liable to be summoned at any moment by a midwife to attend in a case of emergency, and they had to make up their minds at once whether they would work for nothing. The ordinary run of midwifery practice had been largely taken from them by the Midwives Act, but the difficult cases came back to them through the medium of the midwives, and while all these cases presented themselves as emergencies the chances of payment for arduous and responsible ministration were exceedingly small. In the circumstances many medical practitioners refused to attend these emergency cases, while no guarantee was forthcoming that their services would be remunerated, resenting the fact that they should be perpetually expected to forego fees through a sense of humanity. Although the refusals to respond to the calls of midwives were rarely absolute, being very usually relaxed if special circumstances could be shown to exist; still the medical profession was able to show that an amendment of the law was absolutely necessary. Some public health authorities, recognising the unjust position in which medical men were placed, expressed themselves as willing, without waiting for amendment of the law, to be responsible for medical fees where practitioners had responded to the call of midwives, and this spirit might have spread; but it is clearly more satisfactory that the whole Act should be amended. When this is done we trust it will be done fairly, and that the position of the medical man summoned to attend, for example, a case of puerperal fever will be considered. The attendance may be prolonged, and this must be remembered in any arrangement about fees.

Recent Work in Proctology.

IT is only within the last few years that the surgery of the rectum has reached the dignity of a special department of medical science, and even at the present time many in this country would be unwilling to acknowledge the need for any such specialism. Yet it must be confessed that a knowledge of the diseases of this portion of the body has lagged behind somewhat in the general advance of medicine and surgery, a fact which justifies methods of organisation for the making of special researches. It is only in America, however, that a special society has been formed for the study of proctology, and the eleventh annual meeting of the American Proctologic Society was held in June last at Atlantic City, New Jersey. We have before us a report of the proceedings at the meeting and the contents are sufficient to demonstrate to the most sceptical that much is being learned about the maladies and the surgery of the rectum. One of the more important of the many useful and interesting papers was on the use of spinal anæsthesia in rectal surgery by Dr. COLLIER J. MARTIN. He reported a series of 87 cases in which he had employed it; in the majority of these the reason for using this method of anæsthesia was the presence of pulmonary tuberculosis, and the cases treated were nearly all fistulæ or hæmorrhoids. There were two cases of rectal carcinoma removed by the perineal route, and the remaining operations were comparatively trivial. Dr. MARTIN claimed that under spinal anæsthesia the local condition is perfect for the performance of rectal operations, for the sphincters are completely relaxed, there is an entire absence of muscular spasm, and especially there is no venous engorgement which is so commonly seen in patients under ether anæsthesia; as a result of this the hæmorrhage is more easily controlled. Spinal anæsthesia is certainly well suited for rectal work, but the method is not yet perfect. In the first place, it is not desirable in cases where the hips have to be raised above the level of the rest of the body, for there is no small risk that the injected fluid may travel upwards towards the cervical region and the medulla, and so give rise to dangerous symptoms. The after-effects also are not negligible, for in 18 cases headache followed the operation, coming on from one to three days after, but in only three of the cases was the headache really severe, lasting more than a day or two. A few of the patients complained of some stiffness of the back of the neck and shoulders, and in one case a temporary oculo-motor paralysis developed, though it recovered under treatment. There is much to be said in favour of spinal anæsthesia for operations on the rectum, but the present method of using it is so often followed by headache that most surgeons not unnaturally hesitate to employ it except in cases unsuitable for the administration of a general anæsthetic.

The question of the treatment of pruritus ani is sure to find a place in any series of papers on the surgery of the rectum, and at this annual meeting several papers were read dealing with this subject. While many of the cases are amenable to simple local or dietetic treatment, there remain some which refuse to respond to any of the ordinary methods, and these are the cases which have taxed the resources of the surgeon. On the whole, the method of treatment for the more intractable cases which is now most widely employed is that devised by Sir CHARLES BALL; it consists in making elliptical incisions round the anus and then raising the flaps of skin so marked out and replacing them. In this way all the cutaneous nerves of the part are severed, and the irritation ceases at once. Dr. LOUIS J. KROUSE of Cincinnati reported a case in which BALL's operation had been performed for pruritus ani and the flap of skin sloughed, and he pointed out that the elliptical incision cut off the greater part of the circulation of the skin of the part, and was not essential for the success of the operation. Dr. KROUSE has devised a modification of the method which is, he thinks, equally effective and not liable to be followed by sloughing. The operation is performed by making six or eight incisions radiating from the anus. The skin lying between these radial incisions is then undercut until the whole of the circumanal skin is undermined. After all the flaps are loosened, except at their extremities, they are replaced and sutured. The method may be a valuable modification of Sir CHARLES BALL's operation, and it deserves an extended trial. The original method has been very effective in the treatment of the more intractable cases of pruritus ani, and though sloughing of the flaps is a very rare sequela of it, any modification which will prevent the possibility of this result will be a definite improvement.

There was one other paper which needs mention—on cæcostomy. The value of an opening into the appendix by which the large intestine can be irrigated in cases of colitis is more recognised in America than in this country, though even here there are a few who perform the operation. Dr. S. G. GANT of New York prefers to open the cæcum instead of the appendix, as a cæcostomy allows the surgeon to irrigate either the small or the large intestine at will; moreover, the appendix is in many cases unsuitable for irrigating purposes as it is often too short or too narrow, or fixed by adhesions; it tends sometimes to slip back into the abdomen and its lumen readily becomes closed unless kept open by the regular introduction of a catheter. Dr. GANT's suggestive paper will probably lead to trial of his methods and in this way we may obtain a series of comparative results which will help the surgeon in his choice of procedure in particular cases.

The Elusive Ether.

CHEMISTS may well be jealous of the progress which physicists are making in their attempts to unveil the mysteries of the ether. Not many years ago no less a distinguished chemist than MENDELEEFF sought to claim the ether as a definite chemical entity, placing it with the other elements in his periodic classification, and regarding it as the lightest ultimate gas endowed with a high penetrating power. The latest word from the physicist on the subject is contained in Sir J. J. THOMSON's Presidential Address to the British Association for the Advancement of Science at Winnipeg last week, an abstract of which we print in another column in our present issue. Coming from such an indisputable authority, a worker in the domain of physics who has done so much to make our glimpse into the nature of things more penetrating, every word must be received with attention. At first sight it seems startling to be told that far from the ether being a fantastic creation of the speculative philosopher, it is as essential to us as the air we breathe. When, however, we remember that on this earth we are not living on our own resources, that we are dependent from minute to minute upon what we are getting from the sun, and that the gifts of the sun are conveyed to us by the ether, all scepticism on the point of the necessity of its existence, whatever it may ultimately prove to be, must vanish. It is instructive to consider carefully this vast and vital function of the ether, for however hazy our ideas may be as to the real nature of the ether, it is good and certain information about it that it is a channel or agency by means of which energy can be transmitted. Without doubt, were it not for this vehicle the friendly forces of the sun would be lost to us, and with this loss springtime and harvest would disappear, and those great storehouses of energy—fuel, water-power, and food—out of which the whole work of the world is done, and on which alone it can go on, would fail us. In short, the physicist tells us that without ether there cannot be life, and if that be true he does not overstate the case when he says that ether is as essential to us as is the air we breathe.

What, then, is this ether which is so vital to our interests? We find Sir J. J. THOMSON himself asking, Is the ether dense or rare? Has it a structure? Is it at rest or in motion? The answers may be speculative but they are well reasoned. He put the case of light falling upon a body and being absorbed by it. If the body is free to move it is set in motion by the light and is, in fact, pushed forward in the direction in which light is travelling. The body gains momentum and something has lost it, which is the wave of light falling upon it, and hence there must have been momentum in the wave in the direction in which it travelled. Momentum implies mass in motion, and the conclusion is that in the ether through which the wave is moving there is a mass moving with the velocity of light. Calculations based on the pressure due to light show that in a cubic kilometre of ether, carrying light as intense as sunlight is at the surface of the earth, the mass moving is only about one fifty-millionth of a milligramme. But this only refers to the mass moved when the light passes through it; the vast majority of the ether is left undisturbed by the light. We may regard matter, Sir J. J. THOMSON said, as possessing a bird-cage kind of structure in which the volume of the ether disturbed by the wires when the structure is moved is infinitesimal in comparison with the volume enclosed by them. By two independent sets of calculations the density of the ether would appear to be about 2000 million times that of lead; but although, as Sir J. J. THOMSON was careful to add, the idea that we are immersed in a medium almost infinitely denser than lead might seem inconceivable, it is not so if we remember that in all probability matter is composed mainly of holes! And here we come to the place where recent scientific work is pointing to developments of the profoundest importance. The relation of the ether to the radio-activity of certain elements is of such remarkable interest that the door has necessarily been opened to some vast speculations. MENDELEEFF thought that he had found in his chemical conception of the ether an explanation of the remarkable phenomenon of radio-activity, which has given more impetus to both chemical and physical studies than has any other discovery. He assumed that radio-activity was merely the outcome of the power of an element to concentrate within itself the ether. Sir J. J. THOMSON in his profound address supports the "degradation" theory of RUTHERFORD and SODDY. The radio-active elements, these investigators hold, are not permanent, but are gradually breaking up into elements of lower atomic weight. Uranium, for example, is slowly breaking up, one of the products being radium, while radium breaks up into a radio-active gas called radium emanation, the emanation into another substance, and so on. The radiations are thus "a kind of swan's song emitted by the atoms when they pass from one form to another," and so "when a radium atom breaks up and an atom of emanation appears, the rays which constitute the radio-activity are produced." On this view, said Sir J. J. THOMSON, the atoms of the radio-active elements are not immortal, they perish after a life the average value of which ranges from thousands of millions of years in the case of uranium to a second or so in the case of the gaseous emanation from actinium. As is well known, radio-active substances are constantly giving out large quantities of heat, presumably at the expense of their potential energy, and it follows, says Sir J. J. THOMSON, that when these substances reach their final non-radio-active state their potential energy must be less than when they were radio-active. According to RUTHERFORD'S measurements, the energy emitted by one gramme of radium in the course of its degradation to non-radio-active forms is equal to the kinetic energy of a mass of 1-13th milligramme moving with the velocity of light. This energy Sir J. J. THOMSON computes as corresponding with a mass of 1-13th of a milligramme more of ether attached to it than when it has "degraded" into the non-radio-active form If, accordingly, this ether does not increase the weight of the radium the ratio of mass to weight for radium would be greater by about 1 part in 13,000 than for its non-radio-active products. The interesting question remains as to whether the radio-active substances will ultimately furnish the first case in which there is shown to be some differentiation in the action of gravity, a selective action upon mass as against weight, or *vice versâ*. If such anticipations are realised the chemical conception of the ether will linger in our minds only as an interesting suggestion in history.

The question may naturally be asked as to whether these profound chemico-physical studies possess anything more than a mere academic interest; will the ether help us in the treatment of human suffering? The question has already been answered, for are we not waiting now for an intelligible interpretation of the nature of the beneficent action of X rays and other radiations in the treatment of disease? The only interpretation possible must surely be based on our right comprehension of the ether, since without the ether there can be no radiations Medicine will recognise that valuable services have been rendered to her by physics and chemistry, especially during the last few years, and therefore it will welcome the progress of further researches, however technical they may be and however difficult it becomes to follow the significance of the results. We may employ agents in disease of which we know nothing but which we know do good, and we might just as well think of giving up their use as of abandoning the practical application of wireless telegraphy or of the telephone because we do not know exactly what electricity is. Medical men will be willing enough to coöperate with the physicist, to follow him in his abstruse work, and to make the application of that work as free from empiricism as they can. It would not seem to matter which special branch of science we study, for we agree with Sir J. J. THOMSON that the sum of knowledge is a diverging and not a converging series. There are no signs of finality in science, but the latest developments both in chemistry and physics connote such powers of application and demand such resources of reasoning that medical men, having their more special studies to master, must be content to take much upon trust.

Annotations.

"Ne quid nimis."

A WELCOME TAX.

THE French Government is about to impose a tax which will not only be welcomed by the tax-payers themselves, but will also be most agreeable to us in England, and, indeed, it is likely to be hailed with satisfaction in every part of the world. A tax which the tax-payer himself recognises to be to his own advantage and profit is a find that may well engender envy in the hearts of Ministers of Finance throughout the world. Then it has all the better claim to our attention that something similar may be attempted in all countries. By various laws and enactments the French Government has shown its jealous desire to maintain the unsurpassed reputation of French wines. There was a moment when all such hopes were wrecked by the phylloxera. Then imitation wines were thrown on to the market, and these injured the reputation for wholesomeness of natural wines. Now, however, pure wine is again produced in abundance and is cheaper than the wooden barrels or the glass bottles in which it is placed. There is consequently a great temptation to so mix and doctor these very cheap wines as to pass them off as expensive wines coming from some choice vineyards. A Bill has therefore been introduced making it illegal to label a bottle as, for instance, "Bordeaux," unless it really does come from a clearly defined district on the banks of the Garonne and within a certain distance of Bordeaux. Nor shall champagne be champagne unless it comes from the province of Champagne, and cognac must emanate from Cognac, burgundy from Burgundy. The execution of this decree could only be assured by functionaries of the State watching on the spot the exportation of these wines; yet, when once out of sight, there would be nothing to prevent dealers tampering with these wines. Discussing the matter a few days ago with wine-growers of the Lot-et-Garonne and the Gironde, M. Cochery, the Minister of Finance, had a happy idea; he suggested that the State should put a State stamp on every bottle. The wine-growers were overwhelmed with joy at this proposal, therefore M. Cochery quickly added that of course they would not object to paying a penny for each stamp. The grower cordially admitted that a measure which would prevent fraudulent imitations of their products was well worth a penny per bottle. As something like 140,000,000 bottles are sold per annum this tax should bring in £560,000, and no one will be better pleased than those who pay the pennies. In England and elsewhere we shall also be well pleased to have a Government guarantee that what we order is really provided. From the health point of view, obviously the first necessity is to know exactly what we consume, and there is no reason why a system of stamps should not be applied to a great variety of alimentary substances as testimony to their origin and wholesomeness, and, at least in regard to articles of luxury, as a means of raising revenue. Of course, the ordinary French wines which cost about 1½d. the bottle will not bear a penny stamp or seal. The ordinary wine is the food of the poor. To encourage its consumption all taxes have been removed; thus less spirit is drunk and consequently intemperance is not so frequent.[1] The wine-drinking populations are the most sober in Europe. In France itself, as elsewhere, the wines from celebrated vintages are expensive, and it would be well worth the consumer's while to pay a penny extra to have a guarantee that he is not giving a high price for a mere imitation. The tax in the form of a paper label or stamp on patent medicines is the nearest approach in England to the new tax proposed in France. But the English tax affords the consumer no guarantee whatsoever. There are many articles we eat and drink at our risk and peril. A stamp duty that would ensure purity would be doubly useful—to the revenue and to the consumer.

THE MEDICAL TREATMENT OF SCHOOL CHILDREN.

WE have received from Dr. Robert A. Lyster, the county medical officer of Hampshire, a long and important communication on the subject of the medical treatment of school children as affected by recent legislation. The social position of the parents varies greatly, and the children whose case presents the most difficulty are those whose parents cannot afford to provide the requisite treatment and who are not in such circumstances as to obtain relief under the usual interpretation of the existing Poor-law. The present tendency of local authorities is to attempt to deal with these cases either by making some arrangement with local hospitals or by providing school clinics. In Hampshire, however, for local reasons much of the work has been handed over to the Poor-law medical officers, who naturally feel that these cases do not come under the heading of ordinary illness such as is contemplated in a Poor-law medical officer's contract. Mr. Lockhart E. W. Stephens of Emsworth, Hampshire, accordingly wrote on the subject to the board of guardians of the Havant Union. The guardians laid the matter before the Local Government Board and received a reply stating (1) "that if the children do in fact need medical attendance, though not for acute illness, and the parents cannot obtain it, the relieving officer's order for the attendance of the district medical officer should not be refused;" and (2) "that if any children should be found to require operation [illegible] they (the Local Government [illegible] to approve of payments to the [illegible] special arrangements." Dr. Lyster points out that the phrase "operation or specialised attention" can hardly fail to include the treatment of adenoids, diseased conditions of the tonsils ringworm, defective vision, and other bodily defects of which boards of guardians do not generally take cognisance, and as the guardians now possess power to make "special arrangements" for the treatment of such cases there can be no necessity for the local education authority recommending them for gratuitous treatment in hospitals. In fact, this letter from the Local Government Board may provide a satisfactory solution of a debateable question.

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[1] See THE LANCET on Temperance Legislation in France, March 10th (p. 709), and 24th (p. 865), and April 7th (p. 934), 1906.

SCIENCE AT THE SNOW-LINE: THE "ANGELO-MOSSO" INSTITUTE.

We have described the origin and foundation of the institution for nature-study on the Col d'Olen. We have now to report its success in this the second year of its existence—a success which must be specially gratifying to the professor of physiology at Turin, after whom, by right of paternity, it is called, and to the Dowager Queen Margherita who stood godmother at its christening. Taking the route so dear to the amateur alpinista from Alagna and Gressoney, you ascend from Riva Valdobbia by a bridle-path through forest, meadow, and rock to the Albergo Guglielmina, where, in view of Monte Rosa, you refresh the inner man for the renewal of your journey, when less than half an hour brings you by mid-day to the Mecca of your pilgrimage. At this stage you cannot do better than repeat the record of Dr. Umberto Foà—a name held, and held in honour, by more than one of the sub-alpine school—who tells us that on the 19th ult. he found the director, Dr. Alberto Agazzotti, and the students under him busily engaged each in his favourite branch of research, and all more than satisfied with their work, its conditions, and its provisional results. The students were seven in number, four of them Italians, two Germans, and one Swiss. Besides these there had been temporary students, the last of whom were two Belgian ladies, who had in a 25 days' sojourn made an exhaustive study of the flora of the Olen, preceded by other nature students, mainly German, to be followed by fresh arrivals expected by previous announcement. "The life of the institute," says Dr. Foà, "runs an austerely regular course. Each student attends alone, or with one or more companions, at the experiments in the ample, well-equipped laboratories, or in the open, till the not unwelcome sound of the horn brings all to luncheon at 12 and to dinner at 7. These repasts, served at the 'tavola commune,' are prepared by the cook of the institute, who for eight months of the year acts as mistress in an elementary school in Lombardy, and for the two months of residence on the Olen ministers to the refection of the students." Her post, not an easy one to fill, requires her to arrange with the director for the wants of some ten or a dozen exacting stomachs, for whom every day there mount from Alagna the mules laden with meat, vegetables, eggs, milk, and other necessaries, all of which must arrive in good time. But the trying part of her *métier* is the special diet which Dr. A., for instance, whose *menu* consists of rice, potatoes, cheese, and marmalade in view of his personal studies in metabolism, cannot do without; or that of Dr. B., who solves the problem of existence on milk and eggs, taken every three hours. And then there is the commissariat of the laboratory—also to be conveyed to more than 9000 feet above sea-level—such as the rabbits, indispensable to the physiologist, thanks to which (says Dr. Foà) so many useful findings are reached and so many prizes in the shape of monographs are won. At the site of the "rabbit warren" attached to the institute stands the last pole for the telephone service which will connect the Olen immediately with Alagna and mediately with Italy and the outlying world. The opening of this communication with their fellow-men has been hailed with joy by the students, on some of whom the isolation was beginning to tell, and for all of whom it means improved facilities for work. Not that their lives are entirely sedentary. Excursions in the immediate neighbourhood are frequent, reinforced by outsiders. Professor Galeotti of Naples on some of these studied the bacterial flora of the surrounding peaks according to their exposure, besides gathering many specimens on the contiguous rocks. Having brought their experiments on the Olen to an end, the students may supplement them at the "Capanna Margherita"—Queen Margaret's Cabin—fitted up with a physical, a physiological, and a meteorological laboratory. The temperature at the institute, cold in July, becomes milder in August, and returns to cold in September, when the work is suspended for the year, and the tenement is abandoned to the snow under which it lies buried for nine months. Not that it suffers during that interval. Its structure and all its appointments, internal as well as external, are built and framed to withstand the elements—even at more than 9000 feet. The scientific instruments, for example, by the dryness of the air are always found, on the resumption of residence, in excellent condition—much better (according to Dr. Foà) than those in the city laboratories, so that further contributions to the scientific equipment may be made without fear of their being damaged—a consideration which Dr. Foà emphasises in appealing to the world of science and education for fresh acquisitions to the armamentarium. This appeal he strengthens by drawing attention to the published literature of the institute, embodying excellent work, two volumes of which, under the title of "Archivio del Monte Rosa," have already appeared from the firm of Messrs. Treves of Milan, while a third, of still greater value, will shortly see the light—to the credit and advancement of nature-study, Italian and foreign. We cordially say "ditto" to this appeal in the hope that it may receive the desired response not only from the nationalities conterminous with Italy but from others farther afield, including those of the English-speaking world.

SOME INDIGENOUS INDIAN DRUGS.

We have received from India a copy of the second report of the Indigenous Drugs Committee. It contains records of observations made by various officers in India on 12 drugs. The first of these is podophyllum emodi, the resin of which was employed. There was a general consensus of opinion that this drug is a very useful cholagogue purgative, quite equal in value to the resin from American sources. The plant grows in the forests of the Himalayas from Chitral to Sikkim. Experiments have been carried out by the Forest Department in artificially propagating it with fair success. It was formerly stated that the Indian resin had only half the strength of the American, but further analyses seem to show that this is incorrect and that the Indian resin is quite as powerful, while the root contains more of it than the American variety. The next drug investigated was alstonia scholaris, of which a tincture was used. The natives of India use it in fevers and dysentery, and have considerable faith in its action. The observations of the committee are inconclusive but are not encouraging, most reports describing it as inferior to quinine. Picrorhiza kurroa is also extensively used in India under the name of *kutki.* The committee believes it to be useful as a bitter tonic, but the reports received on it were insufficient to warrant any very definite conclusions in regard to its usefulness. Adhatoda vasica appears to be a useful expectorant with actions similar to those of ipecacuanha. In regard to acacia catechu and Cæsalpinia bonducella no reports were received, except a note in regard to the standard of purity of the former, the use of which the committee regarded as not needing demonstration. Calotropis procera and gigantea are used in place of ipecacuanha in the treatment of dysentery. The committee obtained conflicting reports as to their efficacy. In regard to ipomœa hederacea, it appears to be an effective hydragogue purgative and to be useful as a substitute for jalap. Andrographis paniculata appears to be a mild bitter, and to be useful instead of chiretta, but it is inferior to quinine. Embelia ribes used as a vermifuge was only tried in one case, in which it failed. Rheum emodi was found to be unsatisfactory as a purgative. Cassia montana, leaves of which have appeared in the London market as senna, was found to be quite unsatisfactory. The responses received by the committee to its request for reports on the trial of the various drugs do not appear to have been very numerous, and some of those sent in are, as the committee points out, practically useless In spite of these handicaps the report is an interesting one and brings out some useful information.

MOTOR DUST.

IMPROVEMENTS in the construction of motor vehicles have done much to diminish the noise and vibration which they cause, but the nuisance due to the clouds of dust which mark their progress shows no sign of abatement. On the country roads the throwing up of dust is a serious annoyance to other users of the roads, and the occupiers of houses which overlook the public highway are only too well aware of its harmful effect on their property. In Hertfordshire, where many roads are thronged with motorists owing to the proximity of the metropolis, Mr. F. E. Fremantle, the county medical officer of health has expressed the opinion that this dust is a distinct menace to the health of those who are much exposed to it. In his annual report to the county council, after an allusion to the well-known dangers incidental to workers in dusty trades, he points out that road dust contains not only angular gritty particles capable of mechanically irritating the air passages, but also offensive organic matter in a state of extremely fine division The possibilities of contagious and septic diseases being propagated in this way are deserving of careful attention on the part of sanitarians.

FORMALDEHYDE POISONING.

THOUGH formaldehyde in the form of a 35 to 40 per cent. solution (formalin) is much used, cases of poisoning by it are very rare Formalin poisoning is not mentioned in Dr. William Murrell's excellent little book, "What to do in Cases of Poisoning." Probably its pungent odour prevents it from being taken internally either by accident or for suicidal purposes. However, a few cases of poisoning have been recorded in foreign medical literature. I[illegible] by Dr. L. A. Levison in the *Journal of* [illegible] *Association* of June 4th, 1904, p. 1492, between two and three ounces of commercial formaldehyde were swallowed and death in collapse occurred 20 minutes later. At the necropsy the mucosa of the lower part of the œsophagus, the stomach, and the first part of the duodenum were found of a dark chocolate-brown colour and of the consistence of leather. In the same journal of date April 3rd, 1909, Dr. A. J. Bower reported the following case. A girl, aged 20 years, swallowed about half an ounce of formalin. When seen about 20 minutes later she was sitting up and did not complain of pain. Lavage of the stomach was performed and there was a strong odour of formaldehyde in the fluid which first returned. The pulse was 106 and good. After removal of the tube the patient fell to the floor in a condition of collapse with pallor, irregular pulse, and coldness of the surface. Strychnine was given. After several minutes consciousness was partially regained and she complained for the first time of pain in the throat and paroxysmal pain in the stomach. She vomited twice; the vomit was small in amount and contained blood. Demulcents—milk and the white of eggs—were administered and an ounce of castor oil was given (both for its demulcent and cathartic effects) About six ounces of lime-water were administered every two hours alternately with a glassful of water containing a drachm of sodium bicarbonate. The patient remained in a stuporous condition for about 30 hours, during which she could not speak but could understand conversation, the muscles of the mouth making laboured but fruitless movements. The tongue was reddened and swollen and could not be protruded. The eyes were opened with difficulty. After 36 hours she could talk slowly and with difficulty. On being questioned she said that only in the throat had she suffered from constant pain and that this was not severe. At intervals there had been pain in the œsophagus and stomach which did not last long and was severe only at first. Further recovery was rapid; she was able to get up in four days. A specimen of urine obtained 30 hours after taking the poison contained a heavy sediment of amorphous and triple phosphates but no albumin. We may refer to a similar case, presenting, however, some different symptoms, recorded by A. Gerlach.[1] A girl, aged 21 years, drank between two and two and a half ounces of formalin. She rapidly became unconscious and the temperature rose to 100° F., and she vomited a small quantity of material with the odour of formalin. The stomach was irrigated. The unconsciousness lasted 19 hours, during which the urine was suppressed, and there was diarrhœa. Later she passed dark turbid urine containing a trace of albumin and formic acid. Ammonia, in the form of the liquor well diluted or of liquor ammonii acetatis, has been recommended as an antidote for formaldehyde, with which it combines, forming urotropine.

CRUDE AND CORRECTED DEATH-RATES.

THE Registrar-General in his recently issued quarterly return, relating to the second quarter of this year, again calls attention to the necessity for correcting crude death-rates, for differences of sex and age constitution in the several populations, before it be sought to compare the rates of mortality in different areas with a view to testing comparative local health conditions The mean death-rate in the whole of England and Wales during the three months ending with June last was equal to 14·0 per 1000, and was 1·3, or 9 per cent., below the mean rate in the ten preceding corresponding quarters. In the 76 largest English towns, having at the last census populations exceeding 50,000, the crude death-rate last quarter did [illegible]·9 per 1000, and was slightly below the general [illegible] but after correction for difference in sex and age constitution the truer rate for comparison is raised to 14·7, showing an excess of 0·7 upon the rate in the whole of England and Wales. In 143 smaller English towns, which [illegible] 50,000, [illegible]·3 per 1000, which is raised, however, to 13·9 by correction for sex and age constitution. In the mainly rural population of the remainder of England and Wales, exclusive of the 219 large towns, which had in 1901 populations exceeding 20,000, the crude mean death-rate was equal to 14·5 per 1000; this rate, however, when corrected for sex and age constitution is reduced to 13·6 per 1000. Thus while the crude death-rates show an excess of 0·6 per 1000 in the rural death-rate compared with the rate in the 76 largest towns, correction for sex and age constitution shows that the true death-rate in the 76 large towns exceeded the true death-rate in the mainly rural population of England and Wales by 1·1 per 1000, an excess equal to 8 per cent. The sex and age constitution of urban populations is invariably, although to a variable extent, conducive to lower death-rates than the sex and age constitution of rural populations, owing to the relatively large proportion of young adults in town populations, among whom a low death-rate naturally prevails. Thus the crude death-rate last quarter understated the true death-rate in the largest towns by 6 per cent., and in the smaller towns by 5 per cent.; while, on the other hand, the crude death-rate in the remaining and mainly rural population of England and Wales overstated the corrected and truer death-rate by 6 per cent. The necessity for this correction, before comparing rates of mortality in different areas, is thus sufficiently obvious.

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[1] Münchener Medicinische Wochenschrift, Sept. 9th, 1902, p 109.

THE BLACK SPOTS ON CHILLED BEEF.

Dr. E. Klein has recently published a report on behalf of the Frozen Meat Trade Association on "The Nature of Black Spots on Chilled Beef." It appears that the beef shipped to this country from the Argentine occasionally develops circular black spots which are present, either isolated or in groups, on the lower or thin parts in the fascia, in the fatty portion of the thick parts, and in the fat belonging to the inner surface of the flanks. According to Dr. Klein's observations, the spots are due to a mycelium belonging to a fungus of the nature of an oidium which he proposes to call "oidium carnis." It forms oval gonidia either by short lateral branches of the free hyphæ or along and at the ends of the superficial threads in the fat tissue. The oval gonidia are capable of multiplying in the manner of yeast cells. *The most important conclusion of all is that, according to Dr. Klein, the material of the "black spots" is harmless to the animal body, a view which is confirmed by direct animal experiment.* This is not surprising since the growth belongs to the oidium kind of moulds which are not capable of growing at the temperature of the animal body. Lastly, the presence of the mycelium, he states, does not in any way alter the normal character of the tissue elements themselves, either those amongst which the mycelium is situated or those beyond its extension. It is to be feared, however, that it is the appearance of the thing which counts, although there are other foods which are only appreciated by certain people when moulds are present.

FRACTURE OF THE ANTERIOR SUPERIOR SPINE OF THE ILIUM.

IN the *Cleveland Medical Journal* for August Dr. J. H. McHenry has reported a case of fracture of the anterior superior spine of the ilium and reviewed the literature of the subject. A youth, aged 17 years, ran and won a race; directly afterwards he stopped suddenly as he felt "something give way" in his right side, causing a sharp pain. On attempting to walk he could not move his right leg and he had to be carried home. On examination he was found to be well nourished and muscular. He could not stand, and lay with his right foot turned inwards. He could turn the foot from side to side, but could not lift the heel from the bed. When Dr. McHenry attempted to elevate the limb the patient complained of pain over the right anterior superior spine of the ilium. Here slight swelling, tenderness, and crepitation were found. Distinct crepitus was elicited on raising the limb or flexing the knee, and a loose bony fragment could be felt. The fragment was freely moveable up and down when the limb was flexed and rotated inwards, but less moveable when the limb was extended and rotated outwards. Radiography showed a fracture of the anterior superior spine of the ilium, the fragment being 3½ centimetres long and displaced downwards and inwards. The limb was bandaged from the ankle to the groin in order to immobilise all the muscles. The fragment was replaced as nearly as possible in its normal position by manipulation of the limb and held in place by a gauze pad, over which were placed strapping and a spica bandage. The limb was flexed at the hip and knee and secured on a double inclined posterior splint. On the twelfth day the pad was removed. Callus and firm bony union were found and there was no pain or tenderness. The pad was reapplied under a spica bandage. After 16 days the pad was removed and the limb was gradually extended. Massage was applied daily. On the eighteenth day the splint was removed and the patient was allowed about on crutches. On the twenty-second day radiography showed complete bony union and the fragment displaced downwards half a centimetre. The patient was able to get about on crutches, which he discarded in a few days for a cane. Recovery rapidly became complete. Many muscles —the sartorius, tensor vaginæ femoris, external oblique, internal oblique, transversalis, and iliacus—are attached to the anterior superior spine of the ilium, but fracture from muscular violence is rare. Dr. McHenry has found only nine cases in medical literature. All occurred at the ages of 17 or 18 years, except one at the age of 70. Several occurred while running. As the epiphysis of this spine does not unite with the body of the bone until the twentieth to the twenty-fifth year these accidents may be regarded as separations of epiphyses.

THE FOURTEENTH ANNUAL REPORT OF THE EGYPTIAN GOVERNMENT HOSPITAL FOR THE INSANE FOR 1908.

UNTIL a quarter of a century ago the Egyptian Government, apparently with the sanction of its medical advisers, kept 300 lunatics in a pitiable state, often without clothes, and always without adequate food or air. The excited patients, chained like convicts, occasionally had their heads held under running water, which was the only medical treatment vouchsafed to them, while the melancholics sat huddled all day on verminous mattresses in rooms never visited by daylight. With unconscious irony the only medical attendant provided to care for the insane was a veterinary surgeon! To-day they are housed in the same buildings, but everything else has been transformed. No longer regarded as a penal institution from which but few ever emerged, many families are now willing to send their afflicted relatives to be treated, and a few ex-patients voluntarily return every year to the asylum, preferring the care and discipline of Dr. J. Warnock and Dr. H. W. Dudgeon in the Egyptian Government Hospital for the Insane to the jibes and ill-treatment of their own homes. As a consequence, we learn from the fourteenth annual report of that institution that the number of certified lunatics in the country is no longer remarkably small, and that the bed accommodation of the asylum has been gradually raised to 877, and will shortly become 1100 when the whole of the additions now in contemplation are finished. Yet overcrowding is inevitable, and the number of inmates on the last day of the year was 140 in excess of the establishment, though no less than 266 uncured cases were discharged during the year, most of them for lack of room. Progress continues to be made with the new asylum at Khanka, where it is intended to form an agricultural settlement, beginning with 300 chronic mild cases. Of the 561 patients admitted during the year 36 were due to hashish (cannabis indica), nearly all being men from Cairo, Alexandria, and Suez; this is, however, a considerable reduction on previous years, and seems to show that the efforts of the

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in vain. The police, too, deserve credit for unwonted zeal, for they caused nearly 2000 hashish dens to be definitely closed, besides others which were closed for a month or merely fined. The general public still believe that a lunatic is only suffering from the divine wrath, and that it is unnecessary to take steps to control an excitable individual, even when they have given a written guarantee to the asylum authorities that they have the necessary means and will to watch the patient. As instances of the disastrous results of acceding to the demands of friends who insist on the discharge of dangerous patients, Dr. Warnock gives six cases which have come to his knowledge, all having been discharged since June, 1906—three committed suicide, one killed his wife, another broke his father's ribs, while the sixth was re-admitted to the asylum charged with burglary. 35 patients were admitted suffering from alcoholic insanity and 33 from general paralysis; 24 of the latter class proved to have syphilitic histories, and it may be generally stated that general paralytics in Egypt are mostly dwellers in towns, with a history of both syphilis and alcohol, and that they furnish one quarter of the deaths on the male side in the asylum. No less than 134 patients, or nearly 24 per cent., admitted during the year were found to be suffering from pellagra, though only 88 of these were classed as pellagrous insanity, the remainder suffering from some other form of mental disease accidentally associated with pellagra. The hypodermic treatment of pellagra by atoxyl, which has been highly praised by observers in Roumania, was tried on 158 cases, the treatment of each individual extending over one month, but there was no greater amelioration than in a similar number of cases treated during the preceding year without atoxyl. Though the drug seems to be useful in banishing the pellagrous rash of acute cases, atoxyl, both in Egypt and in some of the Southern States of America, has so far not proved to be as useful in the treatment of advanced stages of the disease, which are mostly met with in asylums, as the medical accounts from Roumania led workers to hope. This excellent report concludes with a temperature chart showing how the necessary seclusion of excited cases varies in direct ratio with the heat of the weather. The accidents of the year were mostly due to the violent conduct of the acutely insane and to epileptic fits; many attempts at suicide occurred but none were successful. On one occasion precipitation from a tree was frustrated by the chief of the asylum fire brigade, who cleverly passed a rope round the patient before she fell and thus saved her life, earning for himself a special pecuniary reward. Several attendants were severely handled by patients, and one female attendant lost a finger through being bitten by one of her charges.

THE SERUM-DIAGNOSIS OF HYDATID DISEASE.

THE study of the formation of antibodies within the animal organism has not only given rise to new methods of treatment in regard to bacterial diseases, but has also led to new methods of diagnosis. The same principle has been applied to the diagnosis of diseases produced by parasites of animal origin, and an interesting example of this, which promises to be of real practical value in man, is afforded in a paper published by Dr. Weinberg,[1] as a result of work in Professor Metchnikoff's laboratory on the serum-diagnosis of echinococcal disease. The first to apply this principle in this condition was Dr. Guedini, who, in 1906, succeeded in establishing the presence of specific antibodies in the serum of three persons suffering from hydatids by means of the method of Bordet-Gengou. Dr. Weinberg, in collaboration 50 per cent., which they explained by the fact that they were unable to obtain a pure antigen and were obliged to employ an extract of the parasite for this purpose. On investigating hydatid disease in sheep and using the hydatid fluid as the antigen, they invariably obtained positive results. Working with M. Vieillard, Dr. Weinberg obtained similar results in hydatid disease in the camel. The process employed is based on the phenomenon of Bordet-Gengou, which consists in the fixation of complement by the mixture of the specific serum with the antigen. This fixation of complement is indicated by using sensitised red corpuscles, which remain intact when the serum of the patient contains specific antibodies for hydatid, but suffer a rapid hæmolysis when this is not the case For the test the following substances are necessary: the patient's serum, the antigen (hydatid fluid) complement from a guinea-pig, sheep's red corpuscles, and hæmolytic serum for these corpuscles—i e., anti-sheep's corpuscle serum Two methods of applying the reaction are described—a rapid and a slow. In the former the test is tried with fresh unheated serum, and the guinea-pig's complement is therefore not necessary, but careful controls must be done. Unfortunately, it does not give certain results, and if it is negative it is necessary to employ the slow method. For this two preliminary experiments are necessary—the first being to titrate the guinea-pig's complement; the second to establish whether the antigen and the serums employed, those of the patient and of the control, do not themselves fix the guinea-pig's complement Having established these points various mixtures of normal saline solution, the patient's heated serum, the guinea-pig's complement and the antigen (hydatid fluid) are made, put in the incubator at 37° C for one hour, and then the sensitised red corpuscles are added. After a further half an hour in the incubator the tubes are examined. In order to be certain of the result the hæmolysis must be completely prevented. As a result of observations on 52 cases Dr. Weinberg concludes that the view put forward by Dr. Guedini that the serum of patients with echinococcal disease contains specific antibodies is established. In 27 of these 52 cases the diagnosis of hydatid disease was proved by operation, and in 26 of these the reaction obtained was positive. In one case a negative result was obtained before operation, while a positive reaction was established 20 days afterwards. This Dr. Weinberg suggests as possibly due to the absorption of hydatid fluid during the operation, with a subsequent formation of antibodies The suppuration of the cyst or the production of the death of the cyst by the influx of bile does not prevent the formation of antibodies or hinder the reaction. He gives interesting details of some cases in which the clinical signs were suggestive of echinococcal disease, but in which the serum reaction was negative, where subsequent operation proved the absence of hydatids. The serum reaction proved to be much more trustworthy as an index of the presence of hydatid than the occurrence of eosinophilia. No specific antibodies were found in the urine or in ascitic fluid from cases of hydatid disease. Dr. Weinberg also carried out some experiments with a view of determining how long after operation the specific antibodies elaborated by the organism remained in the serum. He investigated 26 cases at intervals after operation varying from 11 days to 12 years, and in 16 of these he obtained positive results. On the other hand, he has found that in every case where the cyst can be removed entire with its sheaths and without incision the antibodies rapidly disappear from the serum. The question is obviously of importance in regard to reinfection, and in order to determine this in cases giving a positive reaction after operation, Dr. Weinberg suggests the construction of two curves—one showing the course of the eosinophilia, the other the richness of the serum in specific antibodies—in order to observe whether they gradually diminish. Dr. Weinberg's paper is an important addition to our knowledge of hydatid disease, and the method of diagnosis he has established seems likely to be one of great value. He points out that it is more trustworthy than the Wassermann reaction for syphilis, because in the hydatid fluid there is available an absolutely pure antigen. He states that this can be preserved on ice or in the dry state, so that it can be always available. He has also studied the precipitin method of diagnosis employed by Fleig and Lisbonne, but has found it less trustworthy, since it was only obtained in one-third of the cases. He is to be congratulated upon the thorough manner in which he has investigated the question, and his method, if confirmed by other investigators, should eventually become almost a routine procedure in the diagnosis of hydatid disease.

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[1] Annales de l'Institut Pasteur, No. 6, June 25th, 1909, p 473

HÆMORRHAGIC DIPHTHERIA.

Now that the great majority of all cases of infectious disease are isolated in special hospitals we have to depend for advances in our knowledge of them upon the medical officers of the Metropolitan Asylums Board and other similar institutions. We are glad to find that these officers have not only inclination but also facilities for scientific work. An example may be seen in the interesting paper on Hæmorrhagic Diphtheria contributed by Dr. J. D. Rolleston to the Metropolitan Asylums Board Report for 1908, in which statistics are given based on 78 cases of this condition among 1550 cases of diphtheria. From the figures given it appears that the hæmorrhagic form of the disease occurs from year to year with curious regularity, the percentage of such cases being usually between 5 and 6. The incidence is not influenced by the season of the year or by the age or sex of the sufferer, and it does not appear that previous ill-health is a cause of the malignancy of the disease. Along with the hæmorrhages there were invariably present other signs of grave infection, such as extensive membrane, "faucial and palatal œdema, disproportionate adenopathy, pitting of the skin over the glandular swelling, and absence of, or delay in, reaction to antitoxin." The mortality of these hæmorrhagic cases reached 83·3 per cent. Grave as is this figure, it yet has a hopeful aspect, for in days gone by practically all these patients died. The saving of nearly 17 per cent. of the lives is probably due to treatment with antitoxin, the relationship of which to this affection is of considerable interest. It would seem from Dr. Rolleston's observations that early administration of large doses of this remedy has the power of preventing, or at least modifying, the onset of hæmorrhagic symptoms. Thus no cases of this nature occurred among patients who were treated with antitoxin on the first day of the disease, but the percentage steadily rose as the delay in the administration of the serum increased. Further, while among 23 cases in which less than 33,000 units of antitoxin were given none recovered, among 55 who received this and larger quantities 12 finally survived. All those who recovered went through an attack of paralysis. This seems to suggest that there may be one and the same poison at work in the production of hæmorrhage and of the neural lesion. We hope that Dr. Rolleston will pursue his researches into the pathology of the condition, which needs careful elucidation. Is there a mixed infection in these cases? Is there any particular strain of diphtheria bacillus which causes this complication? Are there any special morbid lesions of the various viscera which accompany it? Seeing the close connexion that sometimes exists between hæmolysis and hæmorrhage, as in the case of snake venom, it might be interesting to examine the serum for hæmolytic substances. These and other problems still await solution and may be commended to the attention of the skilled observers in our fever hospitals. The light thrown by statistics on this and kindred questions is of great importance, but will not by itself suffice to determine the nature of the malady.

THE RECENT WORK OF THE GOVERNMENT LABORATORY.

The official report of the principal chemist (Sir Thomas E. Thorpe) of the Government laboratory for the year ended March 31st, 1909, has been issued. Sir Thomas Thorpe may be congratulated upon the completion this year of 15 years' service, during which the work and equipment of the laboratory have been extended considerably. The report, which will be the last one from his pen, shows that the number of samples examined has increased by about 100,000 and the staff by 27. The increase in the number of samples has been due principally to a greater activity in the Excise department, 117,379 samples having been examined last year as against 46,375 in 1894. The number of samples of food and drugs referred to the Government laboratory during the past official year was 120. Of these samples the Government analysts agreed with the public analysts' certificate in regard to 100. 82 of the referred samples were of milk, and 12 were of butter. Amongst miscellaneous samples appears a case of fish poisoning. The river Lemon, which is within the jurisdiction of the Teign Board of Conservators, proved to be contaminated with copper, the source of which was mine drainage. Dead trout taken from a spot near the source of pollution contained copper. The metal was found in the matter washed from the gills, in the viscera, and in other parts of the body of the fishes. Samples of the river water on standing deposited a sediment containing copper. In some analytical work undertaken at the instance of the recent Royal Commission on Whisky Sir Thomas Thorpe reports that the whisky sold at fairs and markets, public-house and refreshment bars was free from any deleterious ingredients such as methylated spirit, vitriol or other mineral acids, or salt, which have been alleged to be used for adulterating whisky of this kind. Most of the samples, he adds, consisted mainly of patent-still spirits, but the prices at which they were sold corresponded generally to the character of the mixture, and as a rule were not excessive. In regard to materials used in the making of beer, 559 samples were examined, of which 30 proved to contain over $\frac{1}{100}$th grain of arsenious acid per pound in the case of solids or per gallon in the case of liquids. Of 114 samples of malt examined only one exceeded the limit, while none exceeded the limit when 278 samples of glucose were examined. 4347 samples of beer were taken from the premises of 1591 publicans and retailers of beer, and 8·1 per cent. of these were found to be diluted with water, five were adulterated by the addition of "saccharin," and three by the addition of a "heading" solution. In considering these quite few facts, which are scattered amongst a great number of others in the report, it is obvious how very important to the community this Government department of control has become.

A telegram from the Governor of Hong-Kong to the Secretary of State for the Colonies, received on August 28th, declared Hong-Kong to be free from plague.

The Earl of Crewe, Secretary of State for the Colonies, has appointed a scientific committee for the study of entomology in relation to the propagation of diseases in man and animals and to the cultivation of plants in the Colonies and Protectorates of British Tropical Africa. This committee, which will have the title of the African Entomological Research Committee, and will be under the chairmanship of the Earl of Cromer, has a distinguished scientific constitution. The committee will publish its results in journal form.

DOMICILIARY MEDICAL TREATMENT UNDER THE POOR-LAW.

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I.—MAJORITY REPORT.

To the critic of the Medical Relief proposals of the Majority Commissioners one thing is apparent, which must be greeted with approval by all practical Poor-law reformers. *The necessity of a Destitution Authority is frankly admitted*, and that in my opinion raises the value of their proposals far above those of the Minority. Regarded closely, the general scheme of the Majority does not tend to do away with all the foundations on which for more than two centuries the English Poor-law has been slowly and laboriously constructed; and although there *seems* to be some grounds for censuring the fantastical manner in which exception has been taken to many old Poor-law terms—an error which the Minority have not failed to make the most of—those wishing to see practical reform in our present Poor-law system without parting with all the land-marks of the past, will be inclined to smile at this weakness, and to welcome as far as they can the efforts to reform much which calls out loudly for reform.

[illegible] s to the creation of new [illegible] the country, are not so [illegible] ght appear, and do not [illegible] of the medical pro- [illegible] present powers of the guardians might be readily transferred; and the system of [illegible] o tend to prevent the new [illegible] the abuses which disgrace [illegible] wn might be modified in [illegible] of the [illegible] e needs [illegible] recom- [illegible] I think [illegible] would be in agreement. It is only when we come to the proposal to base Poor-law medical relief on a system of pseudo-provident dispensaries that our sympathy becomes alienated, and that some of us are tempted to look with pre[illegible] the scheme of the Minority; and on account of [illegible] ently better treatment proffered to us as a public [illegible] shut our eyes to the not unlikely ruinous changes that would be brought upon our common profession by the abolition of the Destitution Authority and the general break-up of the Poor-law, as foreshadowed in their sweeping and revolu[illegible] In fact, we part comp[illegible] [illegible] ortion of the Majority [illegible] Hill and Dr. Arthur [illegible] and we do so because these Commissioners seem to [illegible] doing what they profess to be opposed to, and to [illegible] tically bringing about what they give excellent reasons fo[illegible] not doing.

I will instance two principles which they clearly lay down, to my mind, quite inconsistent with the provident dispensary scheme they propo[illegible] (1) The necessity for having a better sys[illegible] and (2) that on no [illegible] made *general*.

1. In Part V., Chap. 2, Par. 127, we read:—

> The *primary responsibility* of the Public Assistance Authorities for adequate inspection and supervision of the medical relief arrangements should, *we think*, be clearly recognised and carefully maintained.

From this paragraph we see *that not only* is a better system of inspection in the new Poor-law scheme to be maintained by the Destitution Authority, but [illegible] through the appointment of more [illegible] of the [illegible] endeavour made to compare it with [illegible] what might be expected under the new, it seems to me that the present system offers many advantages over the one proposed. It may be true that there is little or no inspection *of Poor-law medical relief at the present time; but it is not true that it is due to any fault in the present system, which presents facilities for an efficient inspection superior to any that could be hoped for from a provident dispensary system.*

Every district medical officer at the present time keeps a large and compendious medical register, in which it is his duty to inscribe every consultation he has with, and every visit he makes to, a Poor-law patient. In addition, he is required to record his prescriptions and general treatment, with the result of the same in a special column. If this is *properly done, as it should be, it is difficult to see how a* better means for testing Poor-law medical relief could be *furnished. If the authorities do not trouble to inspect these* records [illegible] medical [illegible] properly done, but it cannot be denied that there now exists an excellent machinery for doing it. It can scarcely be argued that the proposed dispensary system offers no obstacles to the adoption of the same method. Under any system such as that proposed the main principle is that no distinction is to be made in the treatment of the patients at these dispensaries. All must be treated alike, and what is done in the case of one patient must be done for another. If only State patients are to have records of their treatment entered for inspection it is clear that a different scale of payment must be adopted for State patients. If all are to be treated alike a new scale of fees will have to be paid, having little relation with the present payments of provident dispensar[illegible] If the idea in the minds [illegible] *ation of a series of self-* [illegible] where the majority of the patients are not State patients, it would have been thought by most people that the State minority would rank *pari passu* with the other patients, and that records of their cases would be kept in a similar manner. In that case, away would go all the elaborate reports that are now required in the case of Poor-law patients, and proper inspection would become impossible. If only State patients are to have registers allotted them like the present, the fees for their attendance will have to be increased, and competition will arise among the dispensary d[illegible] as poss[illegible] and if [illegible] an equal claim to State patients a multiplication of registers will be necessary that will not make an adequate inspection easier. From whichever point of view we regard it, it seems clear that a special service for State patients is clearly indicated.

Whenever a provident dispensary has been successful, if [illegible] it will be found that it [illegible] type of out-patient [illegible] se institutions no attempt has hitherto been made to record the cases in the way directed by the Poor-law Orders for obvious reasons. The record required by the Poor-law Orders is essentially for *Poor-law* reasons; in the case of the general hospitals it is for *medical reasons*; that is, a record is required only for [illegible] comparatively small [illegible] the medical interest, [illegible] cessity of an accurate [illegible] the State is quite as [illegible] medical cases as others, and [illegible] wn for doing this work is [illegible] the matter is examined in detail the more the necessity appears of treating State patients apart from others.

[illegible] inspection of the treatment of State [illegible] ated for another reason. A member of [illegible] patient can protect himself by changing his doctor. So that [illegible] permission given to the State patient to change his doctor [illegible] same level in this [illegible] other patients, [illegible] by [illegible] ing a [illegible] is a [illegible] other [illegible] the responsib[illegible] be unable to divest himself of. As a result, the State patient would get less protection and guarantee against neglect than he possesses at the present time. The getting rid of a lay intermediary between the State patient and doctor is another bar to adequate inspection. Evidence is given in the Report of numerous cases where the district medical officer does not trouble to report Poor-law cases to the Destitution Authority but absolves himself from that responsibility by treating them as private patients. *According to the estimate of a competent medical* inspector, this sometimes takes place to the extent of 20 per cent. of all the Poor-law cases. Where a lay officer intervenes it cannot occur, but where the applicants go straight to the doctor he can make them State patients or not, to suit his own convenience. For affording, then, a good and efficient machinery for adequate inspection of Poor-law medical relief the Provident Dispensary scheme of the Majority Commissioners is inferior to the present system.

2. At the commencement of this article attention was drawn to important points in which—in the writer's opinion—the principles laid down for the reform of the present Poor-law system by the Majority Commissioners were superior to those of the Minority. Certain principles were enunciated, as to the soundness of which, it would have been thought, there could be little difference of opinion. The objection to a general gratuitous treatment for a large portion of the community was clearly stated, and the evils likely to arise from such a system plainly pointed out. In such circumstances it seems the more surprising that the Majority Commissioners do not appear to see that some of the most probable results of their provident dispensary scheme would be to bring about what they condemn. In many respects, indeed, the medical relief they propose to administer would be scarcely less likely to be abused than that proposed by the Minority Commissioners. If we carefully read paragraph 186 of Part V.:—

> We therefore recommend that medical assistance be more readily accessible to *all* who are in need of it—

what is to be understood? Do we not see here a recommendation almost identical with that of the Minority Commissioners? It is consistent according to their principles but very perplexing when voiced by the Majority Commissioners. Contrast the above with paragraph 201:—

> The first objection to a gratuitous system of medical assistance is that it would be impossible to confine it to the very poor or even to the poor, &c.
>
> We are faced with the fact that the improvements in indoor medical relief have in 16 years doubled the number of ordinary able-bodied inmates who come for indoor relief in sickness, &c.

How could "medical assistance be more readily accessible to *all in need of it*" without shutting the eyes to the pregnant warning contained in these passages? It is true we read in paragraph 236—

> Medical assistance would be available for all; the rich and the well-to-do, if they took it, *would have to pay for it.*

But is not this the "clear and consistent code" of "chargeability" of the Minority Commissioners once again? Is it not in reality the granting of a gratuitous general medical assistance with the hope that the evils almost certain to be engendered thereby will be mitigated by the recovery of charges from those who have abused the credulity of the State? The fallacious nature of such an expectation is well known to all practical statesmen and is closely connected with the vulgar notion that anything may be done by an Act of Parliament.

Then, as to the increase of indoor relief in 16 years, with the present deterrent methods, does not this inculcate a lesson? If practical experience proves this in the case of indoor medical relief, what is to be expected in the case of outdoor medical relief without any of the deterrent methods? Again, the Majority criticism of deterrents does not seem much sounder than that of the Minority. If we accept the principle that general gratuitous medical assistance is not to be granted some form of deterrence is absolutely necessary, and in my opinion it would pass the wit of man to enunciate a sounder principle than that advised by the Royal Commission of 1834, the gist of which was that the lot of the State supported should not be made better than that of the class above. This would seem to many economists an obvious truism. No doubt deterrents may be of many kinds and some may be quite unjustifiable. But it is easy for the advocates of a general gratuitous system of medical assistance to give abusive names to the only means whereby such a system can be prevented and it tends to make unthinking people imagine that every form of deterrence is unjustifiable. Paragraph 220 says:—

> But it is a waste of public money to provide facilities for medical assistance if the persons for whom they are intended will not use them; and we have seen that the present system does deter classes who ought to benefit by them.

This seems to me misleading. A careless reader would assume that the evidence before the Commission showed much waste of public money through medical relief being supplied, and rejected by the class for whom it was intended. There was considerable evidence to the effect that even under the deterrent methods now in use much money was squandered over improper applicants; but the utmost that could be said to be proved by the evidence before the Commission as to the present methods deterring the respectable indigent poor from applying was that it might have occurred in a few instances. The assumption that a great many of the respectable indigent poor are so affected is quite a gratuitous one. The Majority Commissioners may mean no more than that a few of the respectable indigent poor are deterred, but their words might convey another construction; and if to remedy an evil that must exist under any deterrent all deterrents are to be got rid of, the last state of the respectable indigent poor might be worse than the first. It might be a greater deterrent to some respectable indigent poor that any loafer could get State relief for the asking than that they should be compelled to show to a proper officer their reasons for claiming State help.

It does not require much imagination to see in such a scheme of provident dispensaries the requisites for a system of gratuitous medical assistance for all the poorer classes which is not unfairly described by the Minority Commissioners as a "return to a State Medical Service of gigantic proportions." Such a State service is in many respects inferior to that offered by the Minority Commissioners, and would be just as dangerous to the interests of the medical practitioners of the country. If any poor person could demand treatment at these dispensaries with no more check than is indicated in the Majority Report, a large number of the poor now paying the so-called "cheap doctors" would certainly get their medical assistance for nothing. As the cheap doctor is probably the "cheap substitute" mentioned in the Minority Report as desirable to abolish, it is possible the Majority Commissioners hold a similar opinion. But it is hard on the numerous practitioners in poor districts now getting their living out of the small fees paid by these poor persons; neither is it certain that the treatment at the dispensaries will be any better than the "cheap substitute." All would approve of the coördination of the various overlapping bodies dealing with the State poor. Such a consummation is devoutly to be wished; but it is by no means certain it could not be just as well obtained under the present outdoor medical system or under a reformed system built up on the same lines.

It is a curious fact that the outcry for Poor-law reform was on account of abuses in the *general* relief of the poor; that the *medical* relief, if not faultless, was never regarded by the country at large as being in so bad a condition as the former; and if the latter alone had been in question, it is doubtful whether any Royal Commission would have been appointed to investigate it. Yet the changes proposed in the *medical* system of relief are far more drastic and far-reaching than those for *general* relief. The system proposed for general relief is entirely on the old lines. The relieving officer and his duties are changed only in name. It is true he will be much more hampered, and with the abolition of the deterrent methods will find it increasingly difficult to keep down the charges on the rates. The intimate relationship that has always existed between the duties of the relieving officer and the district medical officer will be largely interfered with and constant friction be caused. The criticism of Mr. Sclater Booth in Par. 64 is a weighty indictment of the proposed transference of certain powers of the relieving officer to the doctor, and if it does not deal directly with this particular point it undoubtedly governs it. Such a procedure would infallibly remove from the Destitution Authority a description of relief which requires to be carefully watched.

I cannot help thinking that the Majority Commissioners' scheme for medical relief *reform was not the result of purely* Poor-law considerations, but was influenced not a little by a [illegible] l. proper reform of the present Poor-law is to await the settlement of these matters, which are of a highly controversial character, so much the worse for the destitute poor of the country. If such reform cannot be brought about without the settlement of these other questions—which I do not for a moment admit—then this scheme of the Majority Commissioners is not large enough and would complicate rather than settle them. A far more revolutionary change would be necessary, more akin to the proposal of the Minority Commissioners, which I should be the last to wish to see attempted.

It must not be forgotten that the great majority of the medical profession are not in love with either provident dispensaries or with contract practice. Both must be largely augmented by the medical relief scheme of the Majority Commissioners, and it is to be feared that the injury likely to arise to professional interests by such augmentation will be much more apparent to the medical practitioners of the country than those from the more insidious and dangerous *proposals of the Minority Commissioners.*

II.—MINORITY REPORT.

In considering the views of those members of the recent Poor-law Commission who signed the Minority Report, it is of great importance that we should look closely at the objects which they appear to be seeking. Much of what they say is in a certain sense true and might be regarded as a reasonable impeachm[illegible] But dealing with the [illegible] in our midst since the [illegible] n many points outside the question. It has no real relation with the Poor-law Settlement of 1834. It does not affect to deal with the destitute, the class alone with which the Commissioners of 1834 had to do. As a matter of fact, it condemns the lines on which those Commissioners made their recommendations. It is clear that the legal destitute and their treatment is but a small item in the minds of the Minority Commissioners, for with that class are practically included all persons not coming within the category of the fairly well-to-do. This would include the great bulk of the wage-earners of the country, and no attempt is to be *made to separate* this large portion of the community from those who have been hitherto regarded as the legal poor. *To all imbued* with the "socialist" spirit of the age such a scheme presents many attractions, and if the objective of the "socialist" party is sound, and if under their guidance the national welfare would be better promoted it is quite justified. But it is difficult to see how the favourers of the present social system can approve of the legislative carrying out of the recommendations of the Minority Commissioners. Many of the details, no doubt, are of value and could be usefully employed in amending the deficiency of our present Poor-laws; but if the recommendations were adopted as a whole, far-reaching changes going much beyond anything that has hitherto been regarded as Poor-law reform would inevitably follow, revolutionising in no uncertain manner conditions on which modern society is constituted.

In dealing with portions of this section I will endeavour to show my meaning *more* clearly. At the commencement attention is drawn to the many evils under which the district medical officers are *compelled to* perform *their duties* and which interfere with the efficiency of their work. The general absence of many *auxiliaries, such as proper nursing* for their patients, surgical dressings, &c., is well *commented* upon, and far be it *from me to suggest* that in this respect there is not the most urgent need for reform. But interspersed with these criticisms are suggestions which, in my opinion, are far from sound. It is better, in my opinion, for the welfare of the *destitute* poor that the medical officer should be at the beck and call of a lay officer, with whom should rest the responsibility of calling in the doctor, rather than the latter *should have* thrust upon him a part of the responsibility that properly belongs to a lay official. No doubt the medical officer is often called in unnecessarily, but unless he sees for himself the nature of the case there is no security for the patient that a serious mistake may not be made or for the public that a scandal shall not result. If no test is to be employed to differentiate between the destitute and the ordinary poor, then I admit the views of the Commissioners appear more intelligible. When we are dealing only with the destitute, it is necessary to have a test whereby it *shall* be possible to distinguish that class from the rest of the nation. If the test is blamed as deterrent, this *deterrence* may yet be good for the public welfare; for it is not only the destitute that have to be *considered; there are other* public interests quite as important, which ought not to be lost sight of by the statesman. *Any test* would probably be deterrent to some of the respectable destitute, but without a test there would be no possible *means of distinguishing* between the really destitute and the great bulk of the poor of the nation. If *the reformer's idea be to relieve* the whole body of the poor in the same way as hitherto the Poor-law has only permitted *in the case of the* destitute, then, and then only, would there cease to be need for any test.

That some such view as this is held by the Minority Commissioners seems to me probable for the following reasons:—(1) Because *they* think that the essential duties of the relieving officer are "deterrent"; (2) because they complain of the restriction of medical orders, and object to a lay officer making surprise visits to ascertain if medical relief has been properly given; (3) because they object that Poor-law relief is bestowed "grudgingly"; (4) because they lay stress on the fact that the application of the sick poor is too late for remedial assistance; (5) particularly, on account of *their criticism* of the fact that numerous cases of infectious disease (non-notifiable) exist among the community, instancing specially the late period at which phthisis is usually dealt with under the Poor-law.

When dealing with a class that must necessarily be a great burden on the resources of the nation, it seems to me only in accordance with common prudence to exercise a wise supervision over all relief administered out of State funds. The fact that the State is interested in the quick restoration to health of the destitute, so as to restore them with the least loss of time to the wage-earning classes, does not seem to me to negative this supervision. The health of all its subjects is admittedly a matter of profound importance to the State; but if all legislation were enacted strictly on sanitary lines the result would be something which might perhaps be better to picture than experience. One thing is certain: individual liberty would become a negligible quantity. As medical relief is believed, and not without good reason, to be a common road to pauperism, [illegible] cannot be excepted, and salutary supervision [illegible] ration of relief [illegible] under observa- [illegible] urged that it is [illegible] *not in order to see that* the doctor's [illegible]ctions are carried out—obviously not, as a lay person would hardly be in a position to—but to observe whether the Poor-law is being abused. In the ordinary ups and down of working-class life does it never happen that the breadwinner suddenly finds good work bringing in as much and even more than most of his neighbours earn who are paying their way? Would such a one, if subject to no inspection, always inform the public authority when assistance was no longer necessary? The difference drawn between the moral effect of the relief administered by the public health and the destitution authority upon the recipient is very questionable. As the conclusions seem to be founded on the character of those relieved in our public health institutions, it is needless to point out that the recipients of this *relief* are drawn from practically the whole population. The moral character of many before receiving *public relief* would be very different from that of most of the destitute. That administration of gratuitous public relief has any different effect upon the moral nature of the recipient, whether it is given by the destitution or *public health authority, I must* respectfully decline to admit until better evidence can be adduced than has yet been published by *the Commissioners.* Public relief is not necessarily degrading—the real test is *the necessity of the recipient. I consider a genuine pauper* more honourable than one much *higher in the social scale* that accepts public relief he *can afford to pay for. Unless* we are to take the view that all the poor are to avail themselves of State relief without supervision, or with no more supervision than is outlined by the Commissioners, such criticism loses much of its weight.

Attention is drawn by the Minority Commissioners to the number of infectious cases and other sickness constantly occurring among the poor for which no medical assistance is sought. This is undeniably common to the whole of the larger class. To deal with those of the destitute only, according to the view of the Commissioners—and rightly too from their point of view—would be useless to promote the larger public health they contemplate. Therefore it is clear that the whole of the larger class, embracing nearly the whole of the working and lower middle classes of the community, must be included in their scheme of medical relief. Doubtless it is a serious question that so many cases of infectious disease should elude the present health authority, but the plain remedy is to extend the Notification Act to include all, not excepting phthisis. There is good reason to believe that nearly all the *notifiable* diseases do come to the knowledge of the public authority; so that it might be reasonably hoped that the present unnotifiable cases would then be known also. If all the evils arising from inadequate, and non-medical, treatment of infectious and other diseases, were to be redressed; if attempts were to be made to seek them out to ensure treatment in their earlier, and more remedial, stage, no ordinary medical service would be large enough. Indeed, short of a national medical service, embracing the bulk of the medical profession, it would be Utopian to attempt to grapple with such an Augean task. Whether the British public would consent to such an interference with their natural liberty, even for their own good, I will not venture to speculate on; whether the net result to the nation, if this obstacle were removed, would be for its ultimate good is certainly open to question. But that the experiment would be very costly, and involve considerations that cannot lightly be dismissed, must be clear to all.

It is a trite saying "That people cannot be made moral by Act of Parliament." It seems to me that it is equally open to question whether all, or even a large number, of the evils aimed at by the Commissioners can be stamped out by legislation. In the process of education, by gradually improving the hygienic knowledge of the masses, there must necessarily be a diminution of these evils. We have seen much amelioration in our time, and expect to see more. But it is devoutly to be hoped that the people of this country will think twice before they give a *carte blanche* to any party of reform to endeavour to obtain by a short cut what can only be safely attained by slow and gradual improvement on those lines on which the growth of the nation has naturally taken place. Much of the reasoning in this section—where reasoning has been attempted—does not carry conviction, and some of the evidence on which it is based is still more open to cricitism. I refer to the inferences drawn of the deterrent character of the Poor-law from such evidence as the statement of a doctor, also a guardian, that the average district medical officer does not give the satisfaction he ought to his patients (Possibly he does not give the "bottle of medicine" so freely as his private professional rival); the statement that the working classes "have the idea that the attention they get from the Poor-law medical officer is not satisfactory" (It would be interesting to know their views of the other private doctors in their district); and the statement of the British Medical Association witnesses that "People avoid calling in the parish doctor, because he is the parish doctor." This last is sadly inconsistent with the evidence that many practitioners take a Poor-law appointment as an introduction to private practice. The Hon. Sydney Holland, again, came to the conclusion, when a guardian, that "every applicant for Poor-law relief was a swindler"; but this does not prove that even the majority of the guardians throughout the country come to such strange conclusions; still less that the average district medical officer regards all his pauper patients as "swindlers." On the whole, I cannot help regretting that there were not a few lawyers among the Commissioners. If that had been the case I do not think so many sensational statements and highly imaginative opinions would have been allowed to rank as evidence.

How far the well-being of the nation would be promoted by the carrying out of a vast scheme of medical relief for the majority of the poor, with no other check to its abuse than the right of the State to recover the cost from those able to pay, I do not feel in a position to decide. The Commissioners own strictures on the present system of "relief on loan" might be aptly considered in this connexion. I can easily conceive that in practice such a scheme would be accompanied by many evils—or what I should consider evils. The present system of general medical practice would certainly be revolutionised. If most of the present practitioners became State doctors, some sort of living would be found for them. Whether they would do better work for the State for a fixed, but modest, salary, probably much less than the average of what they now earn as private practitioners, is a question I do not propose to enter into. Last, and not least, there will remain to be considered whether the army of State patients will be satisfied with the official medical attendance provided for them, especially that portion—probably not a large one—from which under the consistent Parliamentary Code as to chargeability medical fees have been recovered. As this medical service is to be under strict State supervision, it must be assumed that it will be thoroughly efficient and up to date, and that the "mere bottle of medicine treatment" will have become non-existent. Nevertheless, it is not impossible that the poor may draw an unfair comparison between this official medical treatment and what they were accustomed to under their old "pay" doctors. One class of the community, and that, I fear, a considerable one—I allude to the quack doctors and other empirics—would gladly welcome the change. If any such dissatisfaction were to arise, their time would be one of unexampled prosperity. It could hardly be made penal for a State patient to consult a herbalist. At present there are many well-qualified practitioners to whom the dissatisfied patient of a particular doctor may apply. But when all are official doctors, and the independent and competitive doctor is for the most part only preserved in the records of a bygone time, there will only remain the herbalist to whom the people can resort.

In such a service many interesting problems dealing with the relations of patient and doctor would incidentally have much light thrown on them; and medical etiquette as between doctor and doctor, and patient and doctor would require large modification. The ethical duties of the doctor to his patients would be swallowed up in the larger duties owed by the doctor to the State, the common paymaster. This is probably, as the Minority Commissioners think, right and proper. They may be correct, but it certainly is not the view hitherto held by most medical practitioners.

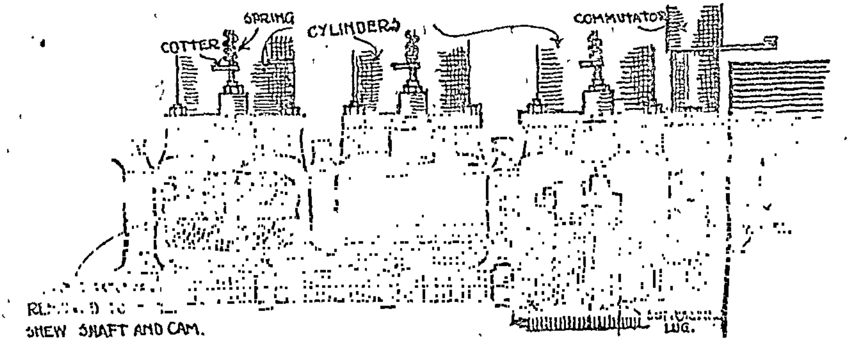
So much, then, for the professional side. But will the effect of the proposed changes be limited only to the business of the doctor. Poor-law relief is not only medical, and it is to be presumed that in the same way as medical relief is given other relief must be provided. If no questions are to be asked of the poor person claiming medical relief, it is hard to suppose that the indigent poor are to suffer from any form of deterrence when seeking other necessaries of life at least as important for their welfare and the ultimate good of the State as medical attendance. It has often seemed to me that the poor wage earner lacking bread, clothing, or other necessary commodity for his family, is as much entitled to expect sympathy from the vendors of the same as from the doctor; and that the latter may take with as little shame the pence of the poor as the prosperous small tradesman, butcher, baker, or general storekeeper. I am compelled to admit that, as a matter of fact, a large portion of the public think otherwise. Now, with regard to all these small tradesmen, how will they be affected? By giving State assistance on easy terms to the proposed large class of poor persons—not destitute, for the very term "destitution authority" or any idea of destitution being the sole claim to State relief is anathema to the Minority Commissioners—will the welfare of these tradespeople be promoted? They pay rates, and out of their industry is to come much of the money that is to supply this indiscriminate State relief. It will seem hard to have to pay out of the rates for necessaries which the poor used formerly to purchase of them. With increasing burdens and dwindling business it may well happen that not a few of the small tradesmen will find it most to their interest to "qualify" for a place among the State assisted, together with their former customers, and instead of adding their contributions to the public purse do their best with other poor persons to get the most they can out of it.

MOTORING NOTES.

BY O. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Valve Lifters and their Guides.

WHEN a valve lifter fractures, a broken portion may, on those cars which have one case for the crank and cam shaft, fall into the crank case. The results may be rather disastrous to the crank. It is therefore a good plan occasionally to inspect the lifter guides, as if they wear the lifter may jam and so be broken, with expensive results. It is cheaper to obviate such possibilities by occasionally seeing if the guides are worn, and if so to either bush them or replace them by new ones. When inspecting a car with a view to purchase, the design and construction of the valve lifters and guides should be thought of. In the better form of lifter a roller is fitted where it receives the impact of the cam; short stems, too, are better than long ones, and the whole lifter, the U-shaped piece holding the roller and the stem, should be a solid forging. Steel blocks, with the stem screwed in and pinned, may last for years, but they may also give, and these little matters, which certainly add to the cost of production, are worth the extra expense, for they minimise, if they do no more, the possibility of a breakdown beyond roadside repair. For simplicity in lubrication the cam case is generally cast in one with the crank case; of course, oil can thus reach the cams and lifters, but the reverse also holds true. A broken roller or block can have a trial of strength with the crank, and in the trial both may suffer, as well as the owner's pockets. I therefore think it would be a good plan if some wide-mesh gauze wire was fitted between the cam and crank case; oil could easily pass, but if an end broke the expensive crank would be saved, and the cam shaft if damaged might be straightened, while the crank as a rule cannot be brought to its proper shape again. The accompanying sketch shows the general construction of an engine with the exhaust cams on one side. In most modern cars the inlets are on *the same side* and are operated off the same cam shaft, but this construction has its drawbacks. Valves, of course, have *occasionally* to be taken out so as to grind the *seats*, as these may cease to be gas-tight through dust or burnt oil lodging and making an impression on either the seat or valve. Therefore let me advise would-be buyers of cars to *select one* with the magneto not on the same side as the cam *shaft*. I have a memory of a friend who did not think of this point, and every time he desired to take out a valve he had *first* to remove the magneto, which was annoying.



Sketch showing the general construction of an engine, with the exhaust cams on one side.

On Grinding Valves.

This operation is generally the first serious undertaking that a novice essays, and I *think* I can truly add that it is usually done months before it is required for the engine's good. It is easily carried out, and, of course gives the feeling that the compression is good; still it is as well to recollect that *emery* is not a lubricant nor a good application for pistons or valve guides. It is rather a bother without some form of spring lifter to remove the valve cotter or key. A very useful compressor is sold by Messrs. Brown Bros. of Newman-street, London, under the name of the "Duco" valve spring lifter. Messrs. Gamage of High Holborn, London, also stock a lifter known as the "Nesthill," and a compressor called the "B.K." With any of these, providing the magneto or exhaust pipes are not in the way, a valve can be speedily and easily removed. To perform the operation take out the valve and dab on the valve seat with a clean finger a little No. 220 corn emery rubbed into a paste with some linseed oil or some of Richford's grinding compound. Then lower the valve into position and with a screw-driver slowly twist it one way and then the other, taking care to keep the valve well pressed down. After doing this some 10 or 12 times wipe away the emery and replace it by a drop of oil and repeat the movements; then wipe with a paraffin rag and notice if a clean ring has been obtained on both valve and seat without any depressions, and if this is the case the job is done. Valves on cars used daily should be anyway examined every three months, and if they are deeply pitted they may need skimming in the lathe prior to grinding in. On most cars there is about a thirty-secondth of an inch clearance between the valve tappet and stem. This is to permit of expansion through heat when the engine is running, otherwise the valve may just touch the tappet and so not "seat" properly. As after repeated grindings the valve may con [illegible] see that when the [illegible] between the tapp [illegible] valve springs, especially exhaust ones, may become weak and thus allow an exhaust valve to open on the suction stroke; it is therefore always a good plan to carry a few spare ones.

The Use of the Stethoscope in Locating Motor Mechanical Faults.

In a recent issue of THE LANCET I wrote about the similarity between medical and motor diagnosis (if I may [illegible] have had sent me a [illegible] use of the [illegible] mechanical faults. The author, who is a "motor physician," and has to maintain a considerable fleet of commercial motor vehicles in running order, states that he finds a stethoscope specially adapted for finding faults in machinery. By its aid he is able to tell if a motor valve is closing correctly, the morbid click being as marked as the diseased one in a case of mitral regurgitation. The grating of a broken piston ring, defective pump vanes, loose brasses, fractured balls in a ball race, faulty bearings, the ticking of "shorts" in a coil, and many other troubles he has by this means detected without having to dismantle the part.' Just after reading this article I came across a multi-cylinder car in which the explosions were erratic, and with the *stethoscope* I speedily discovered the cause, which was an internal "short" on the coil of No. 3 cylinder.

On Restarting the Car without a Starting Handle.

On some of the *older* cars the starting handle was detached and usually was carried loose on the floor. It could thus drop off. Even fixed starting handles can, as a result of letting them slip, become useless for the purpose of starting the engine, for the notch may wear and thus no longer engage with the corresponding one on the crank. At a recent examination held by the Royal Automobile Club for their driver's certificate, I noticed the question that suggested this paragraph: How would you start your car on a level road if the starting handle was lost or useless? Sitting at home, and reading about these things in print, it is perhaps difficult to imagine anyone not immediately knowing what to do, namely jack up the back axle, put the second-speed gear in mesh, and thus start the car by pulling one of the back wheels round. The obvious, however, does not strike one always at the time of emergency, when it is needed, and that must be my excuse for mentioning this "tip."

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE visits which the *British Association for the Advancement of Science* made to Canada in the years 1884 and 1897 were so successful that a third transatlantic voyage to the Dominion was undertaken on the occasion of the present annual meeting, and the proceedings commenced in Winnipeg on August 25th. The President, Sir Joseph J. Thomson, Cavendish professor of experimental physics in the University of Cambridge, delivered a very able address, to which further reference is made in another part of our present issue. In THE LANCET of August 21st we mentioned the titles of the various sections, and now give a brief outline of the addresses delivered by the Presidents of some of them, together with abstracts of a few papers dealing with subjects of medical interest.

In the Anthropological Section Professor JOHN L. MYRES, the President, took the Influence of Anthropology on the Course of Political Science as the principal theme of his discourse. He said that anthropology in its modern developments was a very young science—barely as old as chemistry—and was almost alone among the sciences in being able to reckon any of its founders among the living. The political problems connected with anthropology were, however, of much older date and began to be seriously studied by philosophers in the seventeenth century, when it had become apparent from the narratives of European travellers that great absolute monarchies existed in distant countries which knew nothing of the pope or the emperor. Professor Myres then proceeded to discuss the effect produced upon educated opinion in Europe. Shakespeare's Caliban and the savages described in Defoe's "Robinson Crusoe" were sketched from types of mankind not previously utilised by the dramatist or the romance writer. John Locke, in the "Essay on the Human Understanding," made copious reference to the habits and customs of native races in South Africa, Brazil, Siam, China, &c.; in the "Two Treatises on Government" he showed himself an opponent of the patriarchal theory of society and appealed to modern discovery in the new worlds beyond the oceans against traditional accounts of ancient societies in the Mediterranean basin and the Semitic East. The doctrines of Montesquieu, Rousseau, Voltaire, Hermann Post, and many others were also discussed. In conclusion, Professor Myres urged the extreme importance of establishing in Canada an ethnological survey for studying not only the Indian aborigines but the European immigrants as well.

Miss A. C. BRETON read a paper on Race-types in the Ancient Sculptures and Paintings of Mexico and Central America. She said that the different race-types in the ancient sculptures and paintings found in Mexico and Central America formed an important anthropological study, and that there was in existence an enormous mass of material, evidently of many periods, including sculpture, archaic stone statuettes, portrait statues and reliefs, and magnificent stelæ In terra-cotta or clay there were hundreds of thousands of small portrait heads and figurines found at Teotihuacan, Otumba, the neighbourhood of Toluca, and other ancient sites. Larger clay figures have been found in quantities in tombs, as in the States of Jalisco and Oaxaca; these were made as offerings, instead of the sacrifice of a chief's wives and servants at his burial. Small jadeite heads and figures, also found in tombs, show strongly marked types. If there were few specimens in gold it was because throughout the country the Spaniards ransacked the tombs for gold. In painting there were picture manuscripts, frescoes, and a number of vases with figures from Guatemala and British Honduras. This material is now available for students in Mr. A. Maudslay's "Biologia Centrali-Americana, Archæology," Dr. E. Seler's collected works, the publications of the Peabody Museum, and the reproductions of the Codices by the Duc de Loubat, also in the splendid collections of the Museum für Völkerkunde at Berlin, the Mexican Hall of the Natural History Museum at New York, and the Peabody Museum.

Mr. JOHN MACLEAN read a paper on the Blackfoot Medical Priesthood. He commenced by defining medicine men, or, to use a better term, the medical priesthood, as doctors, prophets, and priests, and gave the different grades in the priesthood. The subject of initiation was then dealt with, and the course of instruction was outlined. Previous to this the would-be medicine man underwent a period of voluntary seclusion, during which he fasted and saw visions. The dress and facial decoration of the fraternity were next described and the sacred numbers were explained. The subject of disease was next treated, the Blackfeet being particularly prone to small-pox and pulmonary tuberculosis. Dr. Maclean then treated of the medicine man in connexion with religion, such subjects as animism, sacred stones, sacrifice, spiritualism, hypnotism, prophecy and incantation being discussed, as well as medicine songs, charms, and amulets. In conclusion, he considered native medicines and remedies, and discussed the value of the work of the medicine men among the natives and the influence exercised by them on the native religion.

Professor H. E. ARMSTRONG'S presidential address to the Chemical Section amounted, generally speaking, to a review of chemical progress. The address was somewhat long and discursive, for he discussed not only the chemistry of carbon compounds, the constitution of matter, the triumphs of synthetic chemistry, but also educational topics, the future of the race, questions of the inequality of the sexes, heredity. and so forth. He was not long in attacking the "ionic" school. Ostwald, he said, has charged his test-tubes with ink instead of with chemical agents, and by means of a too facile pen has enticed chemists the world over into becoming adherents of the cult of ionic dissociation—a cult which he thought might well be ranked with that of "Christian Science," so implicit has been the faith of its adherents in the doctrines laid down for them, so extreme and narrow the views of its advocates. At last, he said, "the criticism which has been far too long delayed is being brought to bear and the absurdity of not a few of the propositions which the faith entails is being made evident; it is to be hoped that we shall soon enter on a period in which commonsense will once more prevail; that ere long an agreement will be arrived at, both as to the conditions which determine it and as to the nature of chemical change in general. The lesson we shall have learnt is one of no slight import if it but teach us the ever-present need of questioning our grounds of belief, if it serve to bring home to us the danger of uncontrolled literary propagandism in science, if it but cause us always to be on our guard against the intrusion of authority and of dogmatism into our speculations." Proceeding, he defended, as he has done on previous occasions, the tendency of chemists to devote themselves to the chemistry of carbon, and said their decision was justified by fruitful events. The central luminary of our system, he insisted, was the element carbon. The constancy of this element, the firmness of its *affections* and *affinities*, distinguished it from all others. Only those, he held, who are truly conversant with the root conceptions of organic chemistry are in a position to attempt the interpretation of the problems of science as a whole, or even to understand the framework upon which it is built up. And yet, he added, we continue to withhold the knowledge of the properties of carbon from students until a late period of their development, and, indeed, when he insisted recently that organic and inorganic chemistry should be taught as one subject to medical students he was told that it could not be, and that in fact the attempt had been made with disastrous consequences. He trusted that the futility of such an attitude would soon generally be realised. Coming to the recent developments in radiochemistry, he said that the conception that the breakdown of radium is spontaneous, and apart from all external impulse or control is also one which should be received with caution. There is reason to suppose that in all ordinary cases in which compounds undergo decomposition spontaneously the decomposition is conditioned by an impurity; the effect, moreover, is usually cumulative. This is true of highly explosive substances, such as chloride of nitrogen and gun-cotton, for example. It might be supposed that something similar would happen in the case of radium, but apparently such is not the case; it is assumed that occasionally a molecule expl[illegible] being incited thereto [illegible] neighbours. The al[illegible] some way acts as a receiver, transforming energy from some external source to which ordinary substances fail to respond and being thereby stimulated to decompose, is at present out of favour, although perhaps more in accordance with its peculiar behaviour. The liberation of helium as a product of radio-active change is in itself a significant fact, in view of the possibility that helium may be an element of intense activity. Nothing in connexion with the problem is more surprising, however, than the apparent production, in course of time, of a whole series of degradation products which differ greatly in stability—such behaviour is entirely without precedent and not at all becoming in elements. No such remarkable and inspiring problem has ever before been offered for solution. We can only wonder, he said, at the results and admire the genius which some have displayed in interpreting them, Rutherford in particular. Yet outsiders may well hold judgment in suspense for the present: whilst it is permitted to workers to make use of hypothesis in every possible way in extending inquiry, the public are in no wise called upon to accept such hypothesis as fact. But apart from the suggestion that elements may give rise to others spontaneously, we have been entertained of late, he added, with stories of elements being converted into others under the influence of the energy let loose by the breakdown of radium. There is reason, however, to suppose, he thought, that the powers of radium may have been greatly overpainted; energy of almost any degree of intensity in the form of high-tension electricity is now at our disposal and the effec[illegible] n living tissues, glass, &c., is of th[illegible] effected by the Roentgen ray disc[illegible] being that the effect is produced more rapidly; it is not to be imagined, therefore, he added, that the discovery of radium has put any very novel intensity of power into our hands. Professor Armstrong used similar slighting terms in regard to the theory of electrons. Of late, he said, there has been talk of electrons, but what is said is little more than superficial paraphrase, in the advanced scientific slang of the day, of the ideas which have long been current. When, following Odling, we represent valency by dashes written after the elementary symbol, we give clear expression by means of a simple convention to certain ideas that are well understood by all among us who are versed in the facts; to speak of electrons and use dots instead of dashes may serve to mislead the unwary, who hang on the lips of authority, into a belief that we [illegible] explanation of the phenomena, but those [illegible] have reached only the let-it-be-grantec [illegible] feel that the electron is possibly but a figment of the imagination, will remain satisfied with a symbolic system which has served us so long and so well as a means of giving simple expression to facts which we do not pretend to explain. Professor Armstrong concluded by emphasising the great importance of applied science. "You will be wise in Canada," he said, "if you take care to select no small number of your abler students—young men of promise physically as [illegible] train them as chemists. Of late [illegible] every side to the incon[illegible] aterials, especially coal, iron, and wood, are being used up in all civilised countries; it is difficult to interest the public in such a subject, as few can appreciate the consequences, owing to the general ignorance of science and to the existence of an optimistic belief in the power of scientific discovery. But nothing will compensate for the exhaustion of your coal and iron supplies. It is your bounden duty to economise these in every possible way. The chemist and engineer will be required to help you in effecting economies by improving present methods of treatment. But the further question arises whether it be not also your duty, here in Canada particularly, without loss of time, to effect still greater economies by utilising the vast stores of energy in your possession, in the form of uplifted water, which now run to waste. The falls of Niagara are among the most glorious and entrancing sights in the world, yet it is permissible to question if any part of their available energy should be dissipated—whether the claims of posterity do not forbid us to allow æsthetic considerations to prevail in such a case."

In the Physiological Section the presidential address delivered by Professor E. H. STARLING of University College, London, dealt nearly as much with sociology as with biology. The special preoccupation of a physiologist being the study of man, he proposed on the present occasion to regard man "as a machine played upon by environmental events and reacting thereto in a way determined by its physical and chemical structure," and "as the latest result of a continuous process of evolution which, begun in far-off ages, has formed, proved, and rejected myriads of types before man himself appeared on the surface of the globe." In the course of the thesis thus outlined, he said that the power of speech was probably developed in the first [illegible] among primitive men [illegible] to say, of [illegible] ls in a task [illegible] olved. As soon as experience could be symbolised in words the community received the advantage of the foresight possessed by any individual who happened to be endowed with a central nervous system which transcended that of his fellows in its process of dealing with sense impressions. It was therefore natural that a class of individuals should be developed, not pursuing the ordinary avocations, but devoting themselves to the study of sequences of sense impressions, and the results of such study, set into words as summary statements of sequence, were known to us as the Laws of Nature. This study of the sequence of phenomena was the office of science.

In the same section Miss IDA Z. REVELEY, M.A., and Dr. SUTHERLAND SIMPSON, of the Physiological Laboratory, [illegible] pap[illegible] said that in their experiments [illegible] lesion was made involving the whole of the motor cortex in the left cerebral hemisphere and the degeneration from it followed by the Marchi method. Above the decussation nothing calling for special notice was observed except the relatively small area occupied by the transverse section of the pyramids in the medulla oblongata. Fibres began to cross over from the degenerated pyramid about the level of the calamus scriptorius and continued to do so till the lower level of the medulla was reached. They were found in small but well-defined bundles, which after decussating passed backward through the grey matter and then turned downward in the funiculus cuneatus, and, to a less extent, in the funiculus gracilis, close to the grey matter. In the first cervical segment they were found in the columns of [illegible] and Goll, but a comparatively large proportion [illegible] in the grey matter of the bulb and probably [illegible] At the level of the seventh cervical segment they ran down close to the postero-mesial border of the neck of the posterior horn and were much less numerous than in the first cervical segment. The number rapidly diminished caudalwards and at the level of the fourth lumbar segment the tract was represented by not more than half a dozen degenerated fibres. In the sacral region they were entirely absent. A point worthy of notice was the large proportion of fibres which, after crossing, terminated in the grey matter of the medulla oblongata, and the relatively small number which passed down the cord.

In the Zoological Section, Mr. A. E. SHIPLEY, the President, after a reference to the centenary of Charles Darwin's birth, commented on the gradual disappearance of several well-known mammalian types, including European and American bisons, whales, seals, elephants, and indigenous Australian animals. He said that in recording the habits and physical f[illegible] anthropologists were settin[illegible] would do well to follow. [illegible] connected with what he designated as "[illegible] such as the apportionment of certain animal types to certain museums, synonymy in zoological nomenclature, and the defects of the present system of appointing the heads of departments in some museums. In concluding, he described the present position of international ocean research, with special reference to the distribution of commercially valuable fish in the North Sea and the Eastern Atlantic. He said that each of the participating nations had at least one large laboratory devoted to this work, the English ones being at Plymouth and Lowestoft.

In the same section Dr. George M. Gould of Ithaca, New York, read a paper on the Rôle of Visual Function in Animal and Human Evolution. He said that he sought to bring to better recognition the difficulties encountered in the creation and the adaptation of the eye to the environment, a large and intimate part of the environment being the animal and human body itself. The difficulties were grouped into those which relate to:—(1) The embryology and optics of the eyeball; (2) the rôle of vision in the development of self-motility of the body; (3) the progress from divergence to parallelism of the optic axes, or from laterality to forward-looking; (4) the adaptations consequent upon the assumption of the vertical posture of the body; (5) the development of the shading mechanisms of the retina; and (6) the struggle against astigmatism and other forms of ametropia, accommodational failure, cataract, ocular and systemic disease. Embryology was suggestive in the facts that the essential part of the eye, the retina, was cerebral substance pushed outside the skull. Ascent of types to fuller or higher function was measured and also largely caused by the slow approach of the visual axes from extreme divergence to the parallelism of Simiæ and Homo, fighting power and individualism proceeding *pari passu* with every approach to parallelism of the visual axes. A still more profound visual difficulty was overcome when it was found visually possible to guide and render habitual the change from horizontality of the animal body to verticality, partly effected in the Marsupialia and the Simiæ but successful in Homo. With the verticality of Homo severe labour was thrown upon the lumbar portion of the spinal column, but the influence of the ocular function of civilisation was required to produce the 80 per cent. of cases among our educated classes of lateral spinal curvature. With Homo came early the use of the hands as manipulative tools, the development of right-handedness and left-handedness, the formation of language, and the location of the cerebral centres of right-handedness and speech in one cerebral hemisphere.

The Mathematical and Physical Section had for its President Professor Ernest Rutherford, Macdonald Professor of Physics in McGill University, Montreal. He took for his subject the Present Position of the Atomic Theory in Physical Science. His first illustration was taken from the well-known phenomenon of Brownian movement first observed with the microscope by the English botanist Brown in 1827. Ehrenhaft in 1907 showed that the Brownian movement was not confined to liquids but was exhibited far more markedly by small particles suspended in gases and viewed by the ultra-microscope, the mean free path for particles of the same size being much greater in gases than in liquids. Experimenting with liquid emulsions, Perrin found in 1909 that each small particle had the same average kinetic energy of movement as the molecules of the solution in which they were suspended; in fact, the particles in suspension behaved in all respects like molecules of very high molecular weight. It was probable that Brownian movement resulted from the movement of the molecules of the solution, and was thus a striking, if somewhat indirect, proof of the general correctness of the kinetic theory of matter. His next illustration was taken from recent work on radio-activity, and he explained the data from which a numerical estimate was obtained of the α particles forming one cubic centimetre of helium gas at standard pressure and temperature. The number was, of course, very large; it was represented by 20 integers, the first three figures of which were 256.

In the Botanical Section the presidential address by Lieutenant-Colonel David Prain was devoted mainly to a general consideration of systems of classification. He said that the two-sided task of the systematist was to provide a census of the known forms of plant life and to explain the relationships of these forms to each other. The work was partly descriptive and partly taxonomic, these two aspects being so interdependent that re-orientation in botanical study has led to seismic disturbances in the taxonomic field, but the materials supplied by descriptive work have remained unaffected. In the present state of our knowledge uniformity in the delimitation of what were termed "species" was unattainable. The thoughtful systematist found that forms which in one collocation need only be accorded a subordinate position, must under other conditions receive separate recognition. The industry displayed in elaborating monographs which attributed a thousand species to genera in which the normal systematist could hardly find a score must often be effort misplaced, while the opposite extreme, or undue reduction of the number of species assigned to a genus was an even worse fault. This impossibility of a uniform delimitation of species seriously weakened the value of normal systematic results for phytogeographical purposes, because the units termed "species" that were most useful in floristic and economic study were often too finely cut to serve distributional ends.

In the Agricultural Subsection, the President, Major P. G. Craigie, spoke mostly on the subject of the statistics of the world's wheat-supply. He said that the course of the wheat acreage from the year 1870 to 1884 and thence onward to 1898 showed during the earlier portion of the period a material advance outstripping that of population and afterwards a serious check followed by a subsequent advance. Taking Russia, the United States of America, Argentina, Australia, and Canada as typical of the exporting centres, there had been during the last decade a much greater growth of wheat acreage than might have been expected from the previous rate of progression.

REPORT OF THE DEPARTMENTAL COMMITTEE ON THE WORKING OF THE MIDWIVES ACT, 1902.

THE following is a summary of the Committee's principal recommendations showing in how many directions the Committee, notwithstanding its opinion that much public good has come from the Midwives Act, is willing that the Act should be modified:—

(a) SUPPLY AND TRAINING OF MIDWIVES.

(1) The Committee deprecate any postponement of the date (31st March, 1910) after which uncertified women will, under Section 1 (2) of the Act, be prohibited from attending habitually and for gain women in childbirth, except under the direction of a medical practitioner, or in cases of emergency.

(2) With regard to the suggestion that in sparsely peopled rural areas annual licences to practise, based upon a modified examination, might, if a serious deficiency occurred, be issued to uncertified women, the Committee, while loth to recommend any departure from uniformity, think that the matter may be left to the discretion which the Central Midwives Board are empowered to exercise in regulating the conditions of admission to the roll.

(3) The Board might properly consider the expediency of giving another opportunity of enrolment to such trained women as were qualified for admission under Section 2 of the Act, but failed to apply before the appointed day (31st March, 1905).

(4) The Committee, regarding the provision and maintenance of an adequate supply of midwives mainly as a question of organisation and distribution, are of opinion that there is no need of any subvention from the State.

(5) The organisation and distribution of the supply should be undertaken by the coördinated action of local authorities and voluntary agencies.

(6) As the most suitable machinery for giving effect to this recommendation, the Committee advocate the establishment of county nursing associations throughout the country, working in coöperation with the local supervising authorities, and affiliated, wherever possible, to some central body such as Queen Victoria's Jubilee Institute.

(7) The details of method will necessarily vary in different districts, but the Committee are of opinion that, in general, the formation of county training homes, and of emergency homes, from which midwives can be drafted temporarily to places where their services are required, will be found a hopeful basis of organisation.

(8) The powers of county councils should be extended so as to enable them to charge upon the county fund contributions in aid of the training of midwives for work in their areas.

(9) Boards of guardians should be encouraged to exercise their powers to subscribe to the support of nursing associations in return for services rendered.

(10) The general introduction into this country of the Irish dispensary midwives system appears to be unnecessary; but, in places where arrangements cannot be made for the utilisation of voluntary agencies, it might be advisable that boards of guardians should be authorised to appoint district midwives.

(11) The Committee consider that in rural districts the practice of midwifery might, with safety and advantage, be combined with district nursing, provided that the requirements of the medical officer of health and the Rules of the Central Midwives Board are carefully observed. In certain areas the system of cottage resident nurses would be found suitable.

[illegible]

(16) An increase in the number of examination centres is recom- [illegible]

[illegible] to adapting them, so far as possible, to the [illegible] and restricted vocabulary of the class of women likely to present themselves from rural districts.

(20) The Central Midwives Board might consider the propriety of [illegible]

(b) REMUNERATION OF MEDICAL MEN SUMMONED ON THE ADVICE OF MIDWIVES

(1) A secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of emergency.

(2) The Poor-law authority should be responsible for the payment, and should be empowered to charge the fee paid as "relief on loan" to [illegible]

(c) DELEGATION OF THEIR POWERS BY COUNTY COUNCILS.

The power of delegation to district councils under Section 9 of the Act should be withdrawn; and, in cases where it is still exercised, the delegation should be revoked.

(d) MISCELLANEOUS.

(1) *Constitution of the Central Midwives Board*

[illegible] increased from nine to twelve, [illegible] ident of the Council, [illegible] nt Board, the British [illegible] Officers of Health. [illegible] ives Institute should [illegible] cal practitioner, and [illegible] Association should be discontinued.

[illegible] the safeguards provided by [illegible] be [illegible] any [illegible] ard

(2) *Finances of the Central Midwives Board.*

[illegible] amended by providing that any [illegible] in their annual [illegible] ivy Council, be [illegible] on the basis of [illegible] ns instead of on [illegible] their intention [illegible] of the Central [illegible] es, such [illegible]

(3) *Midwives Roll.*

[illegible] them with the expense incurred.

(4) *Disciplinary Functions.*

(1.) The existing powe [illegible] Section 8 (3) of the Act, [illegible] prevent the spread of [illegible] cases of infection and [illegible] infection. [illegible] submit her case to the Board.

[illegible] striking [illegible] pay the [illegible] quired to [illegible] recommended.

(5) *Private Lying-in Homes*

The suggestion that lying-in hom [illegible] specially registered seems worthy of [illegible]

(6) *Prematurely born Children*

[illegible] midwives to ask [illegible] f the child, might [illegible] nce to premature births.

(7) *Ophthalmia Neonatorum.*

[illegible] medical help should be [illegible] in the mother or [illegible] notifiable under the [illegible] in the list of the [illegible]

[illegible] who actually delivered the [illegible] efficiency and check abuses in the practice of midwives. It would be desirable that such particulars should be required in all notifications under the Act of 1907, and, if necessary, the Act should be amended in this sense.

(9) *Still-births.*

Statutory provision should be made for the registration of still births.

(10) *Inquiries by the Local Government Board into the effects and working of the Act.*

[illegible] might with [illegible] the [illegible] ould [illegible] tary [illegible]

(11) *Minor Amendments of the Act.*

[illegible]

A FATAL CASE OF SEA-SICKNESS.—Deaths due [illegible] are extremely rare, but an inquest was held [illegible] body of a lady who was found [illegible] following on sea-sickness and extreme prostration during a trip on a "pleasure" steamer.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Sept. 3rd, 1831.

BOARD OF HEALTH.

PRELIMINARY STEPS ADVISED TO BE TAKEN ON THE FIRST APPEARANCE OF CHOLERA.

It is of great importance that each town or village, particularly those on the coast, should be prepared with the best-arranged means to meet such a calamity as the breaking out of the disease now raging in the North of Europe, so as to prevent confusion upon the emergency of the moment, and be ready to act upon a well-considered system for preventing the spreading of infection.

With this view the Board recommends the formation of a local board of health at each place, to consist of the chief magistrate, the clergyman, one or more medical gentlemen, and two or three of the principal inhabitants, who may immediately, and as occasion requires, correspond with the Board of Health in London, the medical members of the local boards being deputed to write upon all subjects relating to any symptoms of the disease.

The best means of preventing the spreading of infection are, the immediate separation of the uninfected from the sick, by their prompt removal from the house of any infected person, or by the removal of any individual affected with the disease, if possible, to some house in a dry and airy situation appropriated to the purpose; but in the event of such removal not being practicable, on account of extreme illness or otherwise, the prevention of all intercourse with the sick, even of the family of the person attacked, must be rigidly observed, unless the individuals who desire to stay shall submit to such strict rules of quarantine as the public safety may demand, and the local Board of Health, advising with the Board of Health in London, may consider expedient.

As success in the treatment of this disease, and preventing it spreading, have been found greatly to depend upon *early* medical assistance, it is of great importance that the heads of families should be vigilant in guarding against concealment or delay in making known every case which may occur.

On the removal of diseased persons, the rooms they may have inhabited, and the house generally, should be thoroughly exposed to a constant current of air, and recourse had to all the well-known means of purifying houses, particularly the use of chloride of lime; and the bedding and clothing of the sick person, after removal, should be soaked in a slight solution of the chloride in water, and well washed. It is impossible that ventilation and cleanliness can be carried too far in the houses of the sick after removal; whitewashing, and a variety of means of effecting so important an object, will no doubt occur to the local Boards of Health, and a continuance of ventilation for some days, as the best means of preventing contagion.

In large towns the local Board of Health should be composed of sufficient numbers to admit of subdivision into district committees, always attaching to each committee at least one medical gentleman.

For the information of the public, and to secure a ready and instant reference to authorised persons, the names and residence of the persons composing the local Boards of Health should be placed on the church door.

In the event of so great a calamity falling upon this country as the introduction of this disease, rules and regulations upon an extensive scale, suited to the rigid system of quarantine which such an event would demand, will be immediately circulated by the Lords of his Majesty's Most Honourable Privy Council, who will, upon the earliest intimation of the existence of the disease, send down a medical practitioner, who has been acquainted with the disease as it occurred in India.[1]

In the name of the Board,
HENRY HALFORD, President.

MEDICINE AND THE LAW.

A Certificate of the Cause of Death followed by an Inquest.

A MEDICAL correspondent has written to us concerning the following case in which he gave a certificate of the cause of death but in which, nevertheless, the coroner decided to hold an inquest. Our correspondent operated on a Sunday upon an appendix abscess which he opened and drained. The patient was under chloroform for 35 minutes and appeared to recover satisfactorily from the effect of the anæsthetic, but eventually died on the Saturday morning following the operation, his symptoms causing the surgeon to certify the cause of death as appendix abscess and, secondarily, chloroform poisoning. The registrar, on receiving this certificate, did not register the death but communicated with the coroner, who held an inquest, a course which is hardly surprising, although it seems to have been unexpected by the surgeon who gave the certificate in question. If the coroner had not decided to hold an inquest the registrar would have registered the death as certified. The Departmental Committee, which has recently considered the question of deaths due to the administration of anæsthetics, may possibly recommend some special mode of inquiry with regard to them. At present a coroner has to decide for himself whether the facts known or believed to exist with regard to a particular case render it one in which the law makes it his duty to hold an inquest. In a large number of cases death follows upon surgical operations necessitated by physical conditions arising more or less naturally, and no inquest is held. This is presumably upon the ground that such deaths are primarily due to the natural causes which the operation failed to remove, and are not violent or unnatural deaths or sudden deaths of which the cause is unknown. In any case it is an established practice not to hold inquests upon them, although coroners are not unanimous in their opinions on the subject. With regard to deaths due to the administration of anæsthetics the case is different. Such administration conducted by qualified persons under normal conditions is not dangerous, and it is not unreasonable to regard a death ensuing upon, and stated to be due to, the administration of chloroform as sufficiently unnatural or open to the suggestion of doubt as to its cause to justify an inquest. The whole question of coroners' inquests, including that arising out of deaths due to anæsthetics, as has been said, is under consideration, and legislation upon the subject may be expected to follow in due course. It may be observed that the process by which notice of the death reaches the coroner, whether from the registrar or otherwise, has been the subject of evidence before the Committee. At present the registrar has duties to perform not entirely defined by statute. Here, again, certain matters may be regarded as being regulated by practice, and there are instructions of the Registrar-General for the guidance of the officials under him. Another correspondent, Mr. Ellis Pearson, who addresses us upon the subject discussed by Dr. E. J. Toye and Mr. F. W. Lowndes in letters to THE LANCET of July 31st and August 7th, sends us a form upon which in certain specified cases registrars are directed to report deaths to the coroner and not to register them until the latter has informed them that he will not hold an inquest. The same form requests the coroner either to forward the finding of the jury in due course or to give his reply, to the effect that an inquest will not be held, at his earliest convenience. With regard to the contention of Dr. Toye, in which Mr. Pearson concurs, that a medical man should give a certificate in all cases, it must be recollected that the section of the Births and Death [illegible] was passed in 1874 before the [illegible] now in force, and that it only ca[illegible] a medical man who has attende[illegible]

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[1] In October, 1831, the Asiatic cholera having extended its ravages from Moscow to Hamburg, the full precautions to be taken were published in the *London Gazette* and an extract from them was published in THE LANCET of Oct. 29th, 1831, p 158 The instructions were issued by the Privy Council at the instance of the Board of Health. The Board of Health comprised the following gentlemen: Sir Henry Halford, President of the Royal College of Physicians, President; Dr. Holland, Dr. Maton, Dr. Turner, Dr. Warren, Dr. Macmichael, Fellows of the Royal College of Physicians; Sir T. Byam Martin, Comptroller of His Majesty's Navy, Hon. Edward Stewart, Deputy Chairman of Board of Customs; Sir James M'Grigor, Director-General of Army Hospitals; Sir William Burnett, Commissioner of Victualling Office; Sir William Pym, [illegible] ine, and Dr Edward James Seymou[illegible] ysicians, Secretary to the Board. T[illegible] is created some years afterward [illegible] "An [illegible] the Public Health," [illegible] & 12 [illegible] NCET [illegible] first considere[illegible] cle [illegible] comprehe[illegible] d for the hygienic regulation of the community." The "anti cholera" clause in it was introduced by Lord Morpeth.

[illegible] man giving the certificate knows that the coroner ought to inquire; that the registrar is not bound to register the death on receipt of the certificate, but may first communicate with the coroner, as in the case referred to above; and that a medical certificate will not be needed if an inquest is held. The most important point, however, seems to us to be the element of doubt which in some cases, and especially in those where there is a suspicion of criminal conduct, renders it undesirable for a medical man to bind himself down unnecessarily to a formal written statement which may afterwards be proved to be erroneous.

Damages Recovered against a Hospital in Scotland.

In the Edinburgh sheriff court recently damages were awarded to a plaintiff who claimed them in respect of injuries sustained by her through being burned on the leg by a hot-water bottle when under an anæsthetic for an operation. The claim was made against the Edinburgh Hospital and Dispensary for Women and Children, and consequently from the report before us the sheriff substitute, who found for the plaintiff, or pursuer, adopted a different view of the law from that enunciated recently by the Court of Appeal in the case of Hillyer *v.* the Corporation of London, commented on in THE LANCET of July 31st, p. 317. The judgments of the Court of Appeal in England are not binding upon the inferior courts of Scotland, or *vice versâ*, although they are often cited and should receive the consideration due to them. It will be interesting to see whether appeal follows in the case referred to and with what result, and whether the question comes ultimately in one case or the other before the House of Lords.

Quack Medicines and Stamp Duty.

Dr. F. J. Waldo recently made some plain-spoken observations upon the policy of the State in deriving a revenue from the sale of stamps for nostrums and "patent" medicines, which cause the ignorant to believe that the merits of the article thus distinguished are certified by the Government of the country. In the case before him, the infant child of an omnibus driver had died when being taken to Guy's Hospital, the death being stated by a member of the staff of the hospital to have been due to status lymphaticus, and the coroner's remarks on the subject of quack medicines and stamps were evoked by an admission on the part of the mother that she had been treating her child herself with a "teething powder." Dr. Waldo elicited medical evidence for the benefit of the jury and others present as to the dangerous drugs present in many of the secret remedies sold and their effect in increasing the high rate of infant mortality.

BRITISH MEDICAL BENEVOLENT FUND.

AT the August meeting of the committee 16 cases were considered and grants amounting to £155 made to 15 of the applicants. Appended is an abstract of the cases relieved:—

Widow, aged 39 years, of M.D., C.M. Aberd. Left penniless at husband's sudden death three years ago, and now endeavours to support herself by letting lodgings. Two children, aged 11 and nine years. Relieved twice, £10 Voted £12

Daughter, aged 63 years, of late M.R.C.S., L.S.A. Used to act as a [illegible] is now unable to obtain a post on account of [illegible] practice, but compelled to [illegible] Voted £18. [illegible] is supported [illegible] eble health.

[illegible] Voted £10.

[illegible] of late L.R.C.P. Irel. Since father's death in [illegible] aching, but now finds it impossible to [illegible] an elder sister whose income is only [illegible]

[illegible] ears. Practises near London, but is in ill health. Four children, aged 12 to [illegible] '16.

Daughter, aged 60 years, of late M.R.C.S. Maintained herself as a dispenser for several ye[illegible] r post. Small earnings by wood[illegible] ho has to earn her own living. [illegible]

M.R.C.S., aged 70 yea[illegible] Only income an Epsom Coll[illegible] m son earning a small weekly [illegible] in one sum.

[illegible] of late M.R.C.S., L.S.A. Used to be a house-[illegible] Relieved three times, [illegible]

[illegible] Lond. Was at one [illegible] operty to assist her [illegible] repay the loan. Has just obtained a pension from another charity. Relieved twice, £22. Voted £5.

Widow, aged 50 years, of L.R.C.P., L.R.C.S. Edin. Quite unprovided [illegible] slight help from a brother-in-[illegible] aged 18 and 16 [illegible] nall income but is [illegible] Relieved seven times, £60. Voted £5.

Daughter, aged 57 years, of L.F.P[illegible] the age of 16 years and helped to [illegible] Now unable to command a salary [illegible]

[illegible] No income, and at husband's [illegible] sed barely sufficient to pay [illegible] ildren. Relieved twice, £20. Voted £10.

Contributions may be sent to the treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 7815 births and 3721 deaths were registered during the week ending August 21st. The annual rate of mortality in these towns, which had been equal to 10·5 and 11·5 per 1000 in the two preceding weeks, further rose to 11·8 in the week under notice. During the previous weeks of the current quarter the annual death-rate in these towns has not exceeded 11·2 per 1000, the rate in London during the same period having been so low as 10·8. The lowest rates of mortality recorded in these 76 towns were 4·4 in Hornsey, 5·2 in East Ham, 5·7 in Walthamstow, and 6·3 in Ipswich; the rates in the other towns ranged upwards to 17·1 in Sheffield, 17·3 in Bootle, 17·9 in Blackburn, 18·8 in Middlesbrough, and 20·2 in Swansea. In London the recorded death-rate was 11·1 per 1000, and slightly lower than in the previous week. The 3721 deaths in the 76 towns showed a further increase of 89 upon the low numbers in the two preceding weeks, and included 604 which were referred to the principal epidemic diseases, against numbers increasing from 314 to 412 in the four previous weeks; of these 604 deaths 429 resulted from diarrhœa, 63 from measles, [illegible] whooping-cough, 30 from diphtheria, 25 from scar[illegible] (principally enteric), but not [illegible] deaths from these epidemic diseases during the week under notice were equal to an annual rate of 1·9 per 1000, against 1·0, 1·1, and 1·3 in the three preceding weeks. No death from any of these epidemic diseases was registered in Hornsey, Ipswich, Grimsby, Stockport, Wallasey, or in West Hartlepool; the annual death-rates therefrom ranged upwards, however, to 4·8 in Nottingham, 4·9 in Aston Manor, 5·0 in Sheffield, 6·0 in Bootle, and 9·0 in Swansea. The deaths, mainly infantile, attributed to diarrhœa in the 76 towns, which had steadily increased in the six preceding weeks from 63 to 208, further rose to 429 in the week under notice, and caused annual death-rates ranging upwards to 4·2 in Nottingham, 4·3 in Aston Manor and in Warrington, 4·9 in Sheffield, 5·3 in Bootle, and 8·0 in Swansea. The 63 fatal cases of measles showed a further decline from the numbers in recent weeks; the highest death-rates from this disease were 1·1 in Salford and 3·3 in Newport (Mon.) The deaths from whooping-cough, which had been 52 and 37 in the two preceding weeks, rose again to 42 in the week under notice. The 30 fatal cases of diphtheria were fewer than in any recent week, but caused death-rates equal to 1·1 in Salford and 1·7 in Barrow-in-Furness. The 25 deaths from scarlet fever also showed a decline from recent weekly numbers; they included 10 in London and its suburban districts, and five in Birmingham. The 15 deaths referred to "fever" corresponded with the number in the previous week; two were recorded in Halifax and four in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had declined in the five preceding weeks from 2737 to 2518, had further fallen to 2411 on August 21st; 245 new cases of this disease were admitted to these hospitals during the week under notice, against 280 and 298 in the two previous weeks. The deaths referred to pneumonia and other diseases of the respiratory organs in London were 122 in the week under notice, against 125 in the previous week, and were one below the corrected average number in the corresponding week of the five years 1904–08. The deaths of infants under one year of age in the 76 towns, which had been 688, 757, and 828 in the three preceding weeks, rose to 1007 in the week under notice. The causes of 24, or 0·6 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. The causes of all the deaths were duly certified in Birmingham, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 55 other smaller towns; the 24 uncertified causes of death in the 76 towns included six in Liverpool, and two each in Manchester, Sheffield, Sunderland, and Preston. The causes of all but one of the 1027 deaths in London were duly certified.

In 76 of the largest English towns 8316 births and 4073 deaths were registered during the week ending August 28th. The annual rate of mortality in these towns, which had been equal to 10·5, 11·5, and 11·8 per 1000 in the three preceding weeks, further rose to 12·9 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these towns, however, averaged only 11·4 per 1000, and the rate in London during the same period did not exceed 11·0 per 1000. The lowest annual rates of mortality recorded in the 76 towns last week were 3·7 in Handsworth, 3·8 in Hornsey, 5·2 in East Ham, and 5·6 in Tottenham; the rates in the other towns ranged upwards, however, to 19·5 in Bootle and in Warrington, 20·7 in Grimsby, and 26·5 in Swansea. In London the recorded death-rate last week was equal to 12·4 per 1000. The 4073 deaths in the 76 towns last week showed a further increase of 352 upon the low numbers returned in the three preceding weeks, and included 853 which were referred to the principal epidemic diseases, against numbers increasing from 314 to 606 in the five preceding weeks; of these 853 deaths, 680 resulted from diarrhœa, 57 from whooping-cough, 50 from measles, 30 from scarlet fever, 29 from diphtheria, and seven from "fever" (principally enteric), but not one from small-pox. The 853 deaths from these epidemic diseases last week were equal to an annual rate of 2·7 per 1000, against rates increasing from 1·0 to 1·9 in the four previous weeks. No death from any of these epidemic diseases was registered last week in Rochdale, Handsworth, Hastings, or in Barrow-in-Furness; the annual death-rates therefrom ranged upwards, however, to 7·1 in Grimsby, 7·6 in Hanley, 7·9 in Warrington, and 10·6 in Swansea. The deaths attributed to diarrhœa in the 76 towns, which had increased from 49 to 429 in the eight preceding weeks, further rose last week to 680, and caused annual death-rates ranging upwards to 5·3 in Liverpool and in Bootle, 5·8 in Rhondda, 5·9 in Nottingham, 7·2 in Warrington, and 9·5 in Swansea. The 57 deaths from whooping-cough also showed an increase upon the numbers returned in recent weeks, the highest death-rates from this disease being 1·1 in Walthamstow, 1·2 in Derby, and 1·5 in Hanley and in Middlesbrough. The 50 fatal cases of measles, however, showed a further considerable decline from recent weekly numbers, although they caused death-rates equal to 2·0 in Stockton, 2·2 in West Bromwich, and 4·7 in Newport (Mon). The 30 deaths from scarlet fever exceeded the number in the previous week by five, and included six in London, four in Birmingham and Aston Manor, three in Liverpool, four in Manchester and Salford, and two in Newcastle-on-Tyne. The 29 fatal cases of diphtheria were within one of the number in the previous week; nine were recorded in London and its suburban districts and two each in Portsmouth, Hanley, Manchester, and Sheffield. Only seven deaths were last week referred to "fever" in the 76 towns, of which two occurred in Grimsby. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had declined in the six preceding weeks from 2737 to 2411, had further fallen to 2347 at the end of last week; 284 new cases of this disease were admitted to these hospitals during last week, against 298 and 245 in the two preceding weeks. Of the 1153 deaths registered in London last week, 103 were referred to pneumonia and other diseases of the respiratory system, and were five below the corrected average number in the corresponding period of the five years 1904–08. The causes of 29, or 0·7 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during last week were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 52 smaller towns; the 29 uncertified causes of death in the 76 towns included five in Liverpool, four in Birmingham, and two each in Manchester, Sunderland, Bolton, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 864 births and 428 deaths were registered during the week ending August 21st. The annual rate of mortality in these towns, which had been equal to 12·0 and 12·6 per 1000 in the two preceding weeks, declined again to 12·0 in the week under notice. During the first seven weeks of the current quarter the death-rate in these Scotch towns averaged 12·3 per 1000; in the 76 large English towns the mean death-rate during the same period did not exceed 11·2. The death-rate during the week under notice in these Scotch towns ranged from 10 1 in Greenock and 11·6 in Glasgow and in Edinburgh, to 14·0 in Leith and 15·6 in Perth. The 428 deaths in the eight towns showed a decline of 24 from the number in the previous week, and included 59 which were referred to the principal epidemic diseases, against 39, 50, and 44 in the three preceding weeks. These 59 deaths were equal to an annual rate of 1·7 per 1000, against 1·4 and 1·2 in the two previous weeks; the rate during the week from the same epidemic diseases in the 76 large English towns was equal to 1·9, owing to the increased fatality of infantile diarrhœa. Of the 59 deaths from these epidemic diseases in the eight Scotch towns, 26 resulted from diarrhœa, 10 from diphtheria, nine from whooping-cough, seven from measles, four from scarlet fever, and three from "fever," but not one from small-pox. The deaths attributed to diarrhœa in the eight towns, which had been 20 and 17 in the two previous weeks, rose to 26 in the week under notice, and exceeded the number in any previous week of this year; 16 were recorded in Glasgow and three each in Edinburgh, Dundee, and Greenock. The 10 fatal cases of diphtheria also exceeded the number in any recent week, and included seven in Glasgow and two in Aberdeen. Of the nine deaths from whooping-cough, corresponding with the number in the previous week, three occurred both in Glasgow and in Edinburgh. The seven fatal cases of measles included four in Glasgow and two in Paisley; and two of the four deaths from scarlet fever were recorded in Edinburgh. The three deaths referred to "fever" were fewer by four than the number in the previous week; one from cerebro-spinal meningitis occurred both in Glasgow and in Dundee, and one from enteric in Edinburgh. The deaths from diseases of the respiratory organs in the eight towns, which had been 51 and 48 in the two previous weeks, further declined to 39 in the week under notice, and were nine below the number in the corresponding week of last year. The deaths in the eight towns during the week included 18 which were referred to different forms of violence, including 10 in Glasgow, three in Dundee, and two in Edinburgh. The causes of 10, or 2·3 per cent., of the deaths in the eight towns during the week were not certified; in the 76 English towns the proportion of uncertified causes of death during the same week did not exceed 0·6 per cent.

In eight of the principal Scotch towns 827 births and 454 deaths were registered during the week ending August 28th. The annual rate of mortality in these towns, which had been equal to 12·6 and 12·0 per 1000 in the two preceding weeks, rose again to 12·7 in the week under notice. During the first eight weeks of the current quarter the death-rate in these Scotch towns averaged 12·4 per 1000, and exceeded by 1·0 the mean rate during the same period in the 76 large English towns. The death-rates last week in these Scotch towns ranged from 8·5 both in Leith and in Perth, to 13·7 in Greenock and 20·3 in Dundee. The 454 deaths from all causes in the eight towns showed an increase of

26 upon the number in the previous week, and included 64 which were referred to the principal epidemic diseases, against 44 and 59 in the two preceding weeks. These 64 deaths were equal to an annual rate of 1·8 per 1000, which was 0·9 below the mean rate from the same diseases last week in the 76 English towns. Of the 64 deaths from these epidemic diseases, 47 resulted from diarrhœa, seven from whooping-cough, three each from measles and scarlet fever, and two each from diphtheria and "fever," but not one from small-pox. The fatal cases of diarrhœa, which had been 17 and 26 in the two preceding weeks, further rose to 47 last week, and included 28 in Glasgow, five each in Dundee and in Greenock, and three each in Edinburgh and in Paisley. The seven fatal cases of whooping-cough showed a further decline from the numbers in recent weeks; three were recorded in Glasgow. The three deaths both from measles and from scarlet fever also showed a decline, including two from measles in Paisley and two from scarlet fever in Glasgow. The two deaths referred to diphtheria and the two from "fever" were all returned in Glasgow; of the two deaths from "fever," one was certified as enteric and the other as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory organs in these eight Scotch towns, which had been 51, 48, and 39 in the three preceding weeks, rose again to 45 last week, but were 30 below the number in the corresponding week of last year. The deaths in these towns last week included 13 which were referred to different forms of violence, of which eight occurred in Glasgow, three in Dundee, and two in Edinburgh. The causes of ten, or 2·2 per cent., of the deaths in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death did not exceed 0·7 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 17·4, 15·2, and 13·5 per 1000 in the three preceding weeks, rose to 19·8 in the week ending August 21st. During the first seven weeks of the current quarter the death-rate in the city averaged 16·1 per 1000, whereas the mean rate during the same period did not exceed 10·8 in London and 12·4 in Edinburgh. The 151 deaths of Dublin residents registered in the week under notice showed an increase of 48 upon the number in the previous week, and included 23 which were referred to the principal epidemic diseases, against 12 in each of the two previous weeks. These 23 deaths were equal to an annual rate of 3·0 per 1000, the death-rate from the same diseases during the week being 1·3 in London and 1·5 in Edinburgh. Of the 23 deaths in Dublin from these epidemic diseases, 20 resulted from diarrhœa, and one each from scarlet fever, diphtheria, and whooping-cough, but not one either from measles, "fever," or small-pox. The deaths attributed to diarrhœa in the city, which had been five and nine in the two preceding weeks, rose to 20 in the week under notice. The 151 deaths at all ages included 44 of infants under one year of age and 39 of persons aged upwards of 60 years; both these numbers showed a considerable increase upon those returned in recent weeks. Five inquest cases and three deaths from violence were registered; and 61, or 40·4 per cent., of the deaths occurred in public institutions. The causes of three, or 2·0 per cent., of the 151 deaths in Dublin during the week were not certified either by a registered medical practitioner or by a coroner; in London the causes of all but one of the 1027 deaths, and in Edinburgh the cause of all the 79 deaths, were duly certified.

The annual rate of mortality in Dublin, which had been equal to 13·5 and 19·8 per 1000 in the two preceding weeks, further rose to 20·4 in the week ending August 28th. During the first eight weeks of the current quarter the death-rate in the city averaged 16·7 per 1000, whereas the mean rate during the same period did not exceed 11·0 in London and 12·2 in Edinburgh. The 156 deaths of Dublin residents registered during last week showed a further increase of five upon the numbers in the two preceding weeks, and included 37, which were referred to the principal epidemic diseases, against 12 and 23 in the two previous weeks. These 37 deaths were equal to an annual rate of 4·8 per 1000, the death-rate from the same diseases last week being but 2·1 in London and 0·7 in Edinburgh. Of the 37 deaths from these epidemic diseases in Dublin, 30 resulted from diarrhœa, five from whooping-cough, and one each from diphtheria and "fever," but not one either from measles, scarlet fever, or small-pox. The fatal cases both of diarrhœa and whooping-cough showed a marked increase on recent weekly numbers. Of the 156 deaths at all ages, 55 were of infants under one year of age, and 29 of persons aged upwards of 60 years; the deaths of infants showed a further considerable increase, and exceeded the number in any previous week of this year. Two inquest cases and two deaths from violence were registered during the week, and 54, or 34·6 per cent., of the deaths occurred in public institutions. The causes of four, or 2·6 per cent., of the deaths in Dublin last week were not certified either by a registered medical practitioner or by a coroner; in London the causes of all but one of the 1153 deaths were duly certified, while the proportion of uncertified causes in Edinburgh was equal to 2·8 per cent.

VITAL STATISTICS OF LONDON DURING JULY, 1909.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·4 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 5·4, 6·1, and 6·5 per 1000 respectively. The lowest rates last month were recorded in Kensington, Stoke Newington, Hackney, the City of London, Lambeth, and Deptford; and the highest rates in St. Marylebone, Bethnal Green, Stepney, Poplar, Lewisham, and Woolwich. Scarlet fever was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Paddington, St. Marylebone, Hampstead, Bethnal Green, Poplar, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 2143, 2207, and 2539 at the end of the three preceding months, had further risen to 2628 at the end of last month; the weekly admissions averaged 358, against 262, 318, and 353 in the three preceding months. The prevalence of diphtheria showed a slight increase over that recorded in the previous month; among the various boroughs this disease was proportionally most prevalent in Fulham, Finsbury, the City of London, Stepney, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 890 diphtheria patients at the end of last month, against 1012, 920, and 890 at the end of the three preceding months; the weekly admissions averaged 107, against 109, 103, and 105 in the three preceding months. Enteric fever was less prevalent than in any previous month in this year. The greatest proportional prevalence of this disease occurred in Islington, Stoke Newington, Holborn, Bethnal Green, Southwark, and Camberwell. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month was 60, against 57, 49, and 58 at the end of the three preceding months; the weekly admissions averaged seven, against seven, eight,

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Shoreditch, Stepney, and Poplar. [illegible] five in Fulham, fever notified during the month included five in Fulham, two in Battersea, and one each in ten other boroughs. Of the seven cases notified as cerebro-spinal meningitis, two belonged to St. Pancras, and one each to Fulham, St. Marylebone, Hackney, Finsbury, and Poplar.

[illegible] statistics in the table relate to the deaths of [illegible] various boroughs, the deaths been distributed among the several boroughs in which the deceased persons had previously resided. During the four weeks ending July 31st the deaths of 3757 London residents were registered, equal to an annual rate of 10·2 per 1000; in the three preceding months the rates were 15·0, 12·9, and 11·1 per 1000. The lowest rates recorded last month were 5·8 in Hampstead, 7·6 in Greenwich, 7·7 in Lewisham, 8·4 in Woolwich, 8·5 in Wandsworth, and 9·0 in Lambeth; the highest rates were 12·0 in Shoreditch, 12·6 in Southwark, 12·8 in Holborn, 13·3 in Finsbury, and 14·0 in Bethnal Green. The 3757 deaths from all causes included 307 which were referred to the principal infectious diseases; of these 104 resulted from measles, 26 from scarlet fever, 35 from